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## Section 1 – INTRODUCTION

(Last revised 6/21/05)

### 1.1 GENERAL

The following module establishes guidelines, which will assist in the development standards set forth by the City of Fairfax. The methods, procedures, design factors, formulas, graphs, and tables presented in this manual are intended to establish minimal guidelines for the solution of drainage problems involving determinations of the quantity of runoff, rate of flow, method of collection, storage, and conveyance of storm water.

The Engineer/Designer on a case-by-case basis may consider alternative design methods; however, there should not be extensive variations from the criteria and procedures within this division without the expressed approval of the City Engineer.

#### 1.1.1 CITY OF FAIRFAX STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES

It is the purpose of this division to define those storm drainage facilities which must be provided by landowners to control rainfall runoff from and across their property in a manner not detrimental to other inhabitants of the City and to preserve, where possible, presently existing natural creek channels. It is the further purpose of this division to minimize the adverse effects of stormwater runoff on downstream drainage ways within the City.

The City may accept stormwater management systems for maintenance if the system provides drainage for streets that have been accepted for maintenance by the City and have been designed and constructed in accordance with the provisions of this document and the related documents outlined in paragraph 1.1.2, A, [Related Documents](#), below.

#### 1.1.2 APPLICABILITY

##### A. Related Documents

- 1) Virginia Stormwater Management Handbook.

- 2) Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, Virginia Erosion and Sedimentation Control Handbook, latest edition.
- 3) Fairfax County Public Facilities Manual for Hydrology.
- 4) Virginia Department of Conservation and Recreation *Virginia Stormwater Management Regulations and Act, 1998*, latest revision.
- 5) Section 110-281 through 110-316 – Storm Drainage Facilities, City of Fairfax Municipal Code.
- 6) Section 110-76, City of Fairfax Municipal Code relating to the Chesapeake Bay Preservation Area.
- 7) VDOT Drainage Manual

### 1.1.3 PUBLIC WORKS DIRECTOR'S RESPONSIBILITY

The Public Works Director shall be responsible for interpretation and implementation of the stormwater management and design criteria for the City of Fairfax. Approval from other applicable agencies may be required.

### 1.1.4 DEFINITIONS

For the purposes of this division, the following words and phrases shall have the meanings respectively ascribed to them by this section:

**Design storm** means all possible combinations of particular storm intensity-duration events occurring on the design storm curve

**Maximum peak runoff** means the largest peak runoff that can occur from any of the particular storms on the design storm curve.

**Metering** means the controlled release of water into the primary drainage system.

**Municipal detention facilities** means municipally-owned facilities located along primary drainage facilities, creeks or channels, which serve the purpose of reducing peak flow by metered release and by storage of that input flow which exceeds the metered output.

**On-site detention facility** means a facility located on a site, which serves the purpose of collecting and detaining rainfall falling on the site for controlled release to the primary facilities as a result of land alteration.

**On-site drainage facility** means a facility located on a site, which serves the purpose of collecting rainfall falling on the site and routing it to primary drainage facilities, creeks, or channels.

**On-site retention facility** means the same as on-site detention facility except that the lower elevation of the pond may be at a level lower than the normal hydraulic grade line of the drainage system into which it drains. Water detained in this lower elevation must therefore be dissipated by evaporation into the atmosphere or seepage into the soil.

**Peak runoff** means the largest runoff intensity, which will occur from a particular storm intensity-duration event on the design storm curve.

**Primary creeks and channels** means natural creeks and open channels located on either private or public property which serve the purpose of collecting rainfall runoff from other sites and routing it from the city to the rivers. A creek or channel shall be considered a primary facility if it accommodates a runoff flow of at least 1.5 times that amount originating from the site on which it is located.

**Primary drainage facilities** mean culverts, gutters, enclosed channels, etc., which serve the purpose of collecting rainfall runoff from other sites and routing it to primary creeks and channels. Drainage facilities shall be considered as primary if they accommodate a flow of at least 1.5 times that amount originating from the site on which they are located.

#### 1.1.5 PRO RATA

- A. The purpose and intent is to require a developer of land to pay his pro rata share of the cost of providing reasonable and necessary drainage facilities located outside the property limits of the land owned or controlled by the developer, but necessitated or required, at least in part, by the construction or improvement of his subdivision or development.
- B. Contact the Department of Public Works for requirements on Pro Rata payments and cost share analysis.

#### 1.1.6 PERMITS

- A. **Plan approvals, Permits:** Prior to commencing construction, all plan approvals applicable permits shall be obtained. A preconstruction conference with the City Inspector must also be held prior to commencing any construction.
- B. **Right-of-Way Permits:** A right-of-way permit will be required from any Contractor or Developer wishing to excavate or place storm drainage structures on either a VDOT or Municipal public right-of-way.
- C. **Pavement Cuts:** Pavement cuts in streets shall be repaired in accordance with the specific requirements of public agency on whose street or roadway the utility is being placed, as well as any other applicable requirements dictated in the approved right-of-way permit. Open cut crossings shall otherwise adhere, as applicable, to specification [Section 02275 – Trenching, Backfilling & Compaction of Utilities](#) and with [Standard Details 401.07 and 401.08](#), as applicable.
- D. Developer must obtain all other State and Local permits, as applicable (Air Quality, Erosion, and Sedimentation Control, Zoning, etc.)

- E. **Plan Review and Inspection Fees:** All plan review and observation fees must be paid prior to approval of project. Refer to the current City fee schedule for applicable fees.

#### **1.1.7 WETLANDS, WATERSHEDS, BUFFERS**

All stream impacts by crossings, pipe placement, excavation, regrading, clearing, maintenance, etc. shall be subject to the applicable US Army Corps of Engineers 404 and Virginia Department of Environmental Quality (DEQ) permit requirements in effect at the time of the permit application as well as the applicable provisions for development in the Chesapeake Bay Preservation areas, Virginia Erosion & Sedimentation Regulations and the provisions of the Virginia Stormwater Management Regulations. Construction within jurisdictional wetlands and buffers shall conform to the applicable permit requirements of the issuing agency.

#### **1.1.8 EROSION AND SEDIMENTATION CONTROL AND VPDES MONITORING, CONTROLS, AND LIMITATIONS FOR PERMITTED DISCHARGES**

The Project Engineer shall submit a sedimentation and erosion control plan to the appropriate authority and obtain all necessary construction permits. The Contractor shall follow all local and state requirements regarding sedimentation and erosion control. Construction methods shall minimize sedimentation and erosion.

It is the Contractor's responsibility to periodically monitor the Stormwater Discharge Outfall points at the specified frequency and maintain reports as outlined in these specifications.

#### **A. Final Limitations and Controls for Stormwater Discharges**

During the period beginning on the effective date of the permit and lasting until expiration, the Owner (Permittee) is allowed and authorized to discharge stormwater associated with construction activity. Such discharges shall be controlled, limited, and monitored as specified below.

- 1) The Contractor shall implement the Erosion & Sedimentation Control plan, which has been approved by the approval authority. The approved plan is considered a requirement or condition of the general VPDES permit. Deviation from the approved plan, or approved amendment to the plan, shall constitute a violation of the terms and conditions of this general permit except that deviation from the approved plan will be allowed:
  - a. To correct an emergency situation where sediments are being discharged off the site, or
  - b. When minor modifications have been made for the purpose of improving the performance of the erosion and sedimentation control measures and notification of the minor modification has been made to the Virginia Department of Conservation and Recreation (DCR) or approved local

program. In addition, the responsible land developer shall be notified of the modifications.

Such a deviation from the approved plan shall be noted on the approved plan maintained at the job site. During active construction, a copy of the approved plan shall be maintained on the site.

- 2) Equipment utilized during the construction activity on a site must be operated and maintained in such a manner as to prevent the potential or actual pollution of the surface or ground waters of the state. Fuels, lubricants, coolants, and hydraulic fluids, or any other petroleum products, shall not be discharged onto the ground or into surface waters. Spent fluids shall be disposed of in a manner so as not to enter the waters, surface, or ground, of the state and in accordance with applicable state and federal disposal regulations. Any spilled fluids shall be cleaned up to the extent practicable and disposed of in a manner so as not to allow their entry into the waters, surface or ground, of the state. Any spills require notification to the City Fire Marshal.
- 3) Herbicide, pesticide, and fertilizer usage during the construction activity shall be consistent with the Federal Insecticide, Fungicide, and Rodenticide Act and shall be in accordance with label restrictions.
- 4) All wastes composed of building materials shall be disposed of in accordance with Virginia Waste Management Act and Chapter 74 of City Code.
- 5) The Contractor, for the Permittee, shall control the management and disposal of litter and sanitary waste from the site such that no adverse impacts to water quality occur.

#### **B. Minimum Monitoring and Reporting Requirements**

Monitoring and reporting requirements are as follows unless otherwise approved in writing by the DCR or the approved local program.

- 1) All erosion and sedimentation control facilities shall be inspected by or under the direction of the permittee (the Owner). However, the responsibility for inspection is herein delegated by the Owner to the Contractor as part of this project. Inspections shall be made:
  - a. At least once every seven calendar days (at least twice every seven days for those facilities discharging to waters of the State listed on the latest EPA approved 303(d) list for construction related indicators of impairment such as turbidity or sedimentation),
  - b. And within 24 hours after any storm event of greater than 0.5 inches of rain per 24-hour period.

A rain gauge shall be maintained on the site by the Contractor and a record of the rainfall amounts and dates shall be kept by the contractor.

- 2) Once land disturbance has begun on the site, stormwater runoff discharges shall be inspected by observation for stormwater discharge characteristics as defined below at the frequency in stated above to evaluate the effectiveness of the pollution control facilities or practices. If any visible sedimentation is leaving the disturbed limits of the site, corrective action shall be taken immediately to control the discharge of sediments outside the disturbed limits.

Stormwater Discharge Characteristics	Monitoring Type <sup>1</sup>	Monitoring Location <sup>2</sup>
Clarity	By observation	SDO
Floating Solids	By observation	SDO
Suspended Solids	By observation	SDO
Oil Sheen	By observation	SDO
Other obvious indicators of stormwater pollution	By observation	SDO

**Footnotes:**

<sup>1</sup> Monitoring Type: The monitoring requires a qualitative observation of each stormwater outfall. **No analytical testing or sampling is required.**

<sup>2</sup> Sample (observation) location: **SDO= Stormwater Discharge Outfall**

- 3) The operator (Contractor) shall keep a record of inspections and forward copies of these reports to the City Engineer. Visible sedimentation found outside of the disturbed limits shall be recorded and a brief explanation kept with the records as to the measures taken to control future releases. Any measures taken to clean up the sediment that has left the disturbed limits shall also be recorded. These records shall also be made available to DCR, the local program or an authorized agent upon request. If the City Engineer discovers sedimentation outside the limits of disturbance, the Contractor and the responsible land developer will be notified in writing and requested to remediate the situation.
- 4) All records of monitoring shall be turned over to the City along with the "red lined" record water and/or sewer drawings.

### C. Schedule of Compliance

- 1) The Contractor shall comply with Final Limitations and Controls specified for stormwater discharges once disturbance has begun on the site and until completion of construction or development and the establishment of a permanent ground cover.
- 2) During construction and until the completion of a construction or development and the establishment of a permanent ground cover, the Contractor shall provide the operation and maintenance necessary to operate the stormwater controls at optimum efficiency.

### 1.1.9 PERFORMANCE STANDARDS FOR FACILITIES

- A. Facilities shall be designed and maintained in such a manner as to minimize economic and environmental costs to the City and its inhabitants. Ponding facilities for the detention and retention of stormwater runoff shall have sufficient capacity to safely pass flood flows from the design storms in Table 1.1. Standard engineering safety factors will be observed as minimum requirements in the design of all detention and retention facilities. Nothing in this section will prevent the City from applying more restrictive criteria to the design of any and all facilities for the detention or retention of stormwater runoff. This requirement will be met if facilities perform as specified under the worst combinations of the specified design storm as defined in the city drainage facility specifications.

Table 1.1	
Usage	Design Storm
On-site drainage	Detention storm
Streets, gutters and inlets	10-year storm
Culverts	25-year (Primary Roads Crossings) 10-year (all others crossings) 100-year (Check for flooding)
Storm sewers	10-year
Channels/Natural	10-year (Capacity) 2-year (Liner Requirement)
On-site detention*	2-year, 2-hour and 10-year, 2-hour

\* Design storm varies based on type of detention used (i.e., detention ponds, trenches, rooftop storages, etc.). Use recommended design storms for detention/retention facilities design in accordance with the *Fairfax County Public Facilities Manual – Drainage*, Section 6-1300.

#### B. Performance Requirements

- 1) **On-site drainage:** On-site drainage shall be adequate to prevent flooding or damage to any structure located on the site.
- 2) **Channels:** Where primary channels or other open conduits have been approved for use by the Director of Public Works or his designee as storm drainage transports they shall, in addition to meeting other requirements, be adequate in the opinion of the Director of Public Works or his designee to prevent flooding outside of any designated floodplain area.

#### C. City Responsibilities

- 1) **City-owned drainage system:** The City shall maintain and control natural drainage systems and other drainage or detention or retention systems that have been constructed by or dedicated to the City. In no event will the city be financially responsible for maintenance of private systems.
- 2) **City-owned drainage system development impacted:** The City shall specify, design and construct off-site improvements to the storm drainage system when such improvements are made necessary by changes in land

use and when additional runoff caused by such changed land use cannot be adequately accommodated by detention or retention systems; such off-site improvements are to be paid for by those landowners whose land alteration made the improvements necessary.

**D. Design Requirements:**

- 1) All facility design computations and drawings must be submitted to the Director of Public Works and approved by him/her prior to the issuance of building permits or the approval of site plans or subdivision plats.
- 2) A copy of the design documentation will be kept on file by the City staff.
- 3) A record of land use existing on September 17, 1974, and assumed water runoff rate coefficients and stream flows will be maintained by the Director of Public Works and made available for use in facility design. Runoff coefficients used in computation of land alteration drainage impact shall be as set forth in this section or appropriately computed runoff coefficients based on actual site plans and soil conditions. The City Engineer will supply estimates of peak runoff and stream flows for use in the design of primary channels, culverts, and detention facilities; these values will be based on actual land use covers and will utilize the runoff coefficient "C" values from the *Virginia Stormwater Management Handbook* and the *Virginia Erosion and Sediment Control Handbook* in accordance with the comprehensive development plan.

<b>Zoning Classification</b>	<b>Runoff Coefficient</b>	<b>% Impervious</b>
Parks, Cemeteries, and Unimproved Areas	0.10 – 0.35	Up to 15%
Single-Family Development		
Lots 9,500 ft <sup>2</sup>	0.40 – 0.50	35
Lots 12,500 ft <sup>2</sup>	0.40 – 0.45	30
Lots 20,000 ft <sup>2</sup>	0.35 – 0.45	25
Multifamily Development (Apartment & Townhouses)	0.65 – 0.75	75
Schools & Churches	0.50 – 0.60	50
Business, Commercial & Industrial	0.80 – 0.90	90
Planned Development	0.50 – 0.75	60
<b>Surface Types</b>	<b>Runoff Coefficient</b>	
Pavement and Roofs	0.90	
Lawns	0.25 – 0.35	

- 4) Low Impact Development (LID): Developers are encouraged to submit LID options that meet stormwater and water quality standards as stated in the City of Fairfax Public Facilities Manual. All LID submittals shall be reviewed



by the applicable reviewing agencies and will be considered for allowable use on a case-by-case basis.

#### **E. On-site drainage facilities**

Where on-site drainage facilities are proposed by a developer, he shall specify the following:

- 1) Safety Factors.
- 2) Material identification.
- 3) Cleaning, maintenance, inspection provisions.
- 4) Design storm shall be specified by the City as set forth in *Fairfax County Public Facilities Manual – Drainage*, Plate 3-6, I-D-F Curve.

#### **F. Construction Requirements**

All construction shall conform to the ASTM standards, the VDOT Road and Bridge Specifications as amended from time to time and the applicable section of the specifications in the City of Fairfax Public Facilities Manual.

#### **G. Inspection Requirements**

Periodic inspections shall be performed by the city to ensure that the facilities are being built in accordance with the plans and specifications.

### **1.1.10 EASEMENTS**

- A. All storm sewers and channels to be maintained by the City of Fairfax or private owners shall be within dedicated storm easements.

#### **B. Storm Sewers**

- 1) The following are the minimum easements for storm sewers:

Pipe Size - ID (in.)	Easement Width (ft.)
15-18	10'
21-33	15'
36-48	20'
54-72	24'

- 2) Where multiple pipes are installed, the edge of the easement shall be 5' clear from outside of the pipe.
- 3) Where easement do not follow established lot lines, add 5' to the easement width on the side toward the building.

#### **C. Channels**

- 1) The following are the minimum easements for channels:

Top Width of Channel	Easement Width (ft.)
<2'	10'
2' – 4'	10' greater than top width with minimum of 5' on one side
>4'	15' greater than top width with minimum of 5' on one side

#### 1.1.11 CHESAPEAKE BAY PRESERVATION

The performance standards, review and approval procedures, and regulations for the Chesapeake Bay Preservation areas shall comply with the City's Chesapeake Bay Ordinance.

Best Management Practices (BMP) are required to reduce the non-point source pollution loading from development to ensure no net increase in loading from new development and at least a ten percent (10%) reduction over existing conditions for redevelopment projects. Allowable loadings are based on the City's 45% average land cover conditions. Refer to City Code Section 110-84 for additional information regarding the performance standards for Chesapeake Bay preservation areas.

#### 1.1.12 PIPE MATERIAL APPLICATIONS

- A. **General:** Use pipe and methods of joining in accordance with the following:

Table 1.1	
PIPE MATERIAL	USE CONDITIONS
Plain Concrete Pipe (ASTM C14)	15" min, not permitted in traffic areas, can be used for side drains
Reinforced Concrete Pipe (ASTM C76)	15" min, for driveways and roadways
Corrugated Aluminum Alloy Pipe (Round or Arch)	Type 1A not permitted
Aluminum Coated Metal Pipe	Not allowed

#### 1.1.13 MAXIMUM PIPE LENGTH BETWEEN STRUCTURES

To permit maintenance of pipe drainage systems, unless otherwise approved by the City Engineer, the maximum length of pipe runs shall not exceed the distances provided in Table 1.2 without a catch basin or manhole junction box.

TABLE 1.2		
PIPE MATERIAL	SIZE (inches)	MAXIMUM LENGTH (feet)
Plain Concrete Pipe	15 to 24	425
Reinforced Concrete Pipe	15 to 48	425
	54 and 60	800 <sup>1</sup>
	66 and larger	1000 <sup>1</sup>

<sup>1</sup>This length may be exceeded with approval of the City Engineer on a case-by-case basis.

**1.1.14 STRUCTURE PLACEMENT REQUIREMENTS:****A. Pipes 48-inch or less:**

- 1) At all vertical or horizontal changes in direction
- 2) At all junctions
- 3) At all catch basins

**B. Pipes greater than 48 inches but less than 66 inches:**

- 1) At all vertical or horizontal changes in direction except where horizontal curves are proposed in the pipeline and the pipe manufactured with bevels for that purpose.
- 2) At junctions where the intersecting branch line is greater than half the diameter of the main being tapped.
- 3) At all catch basins

**C. Pipes 66 inches in diameter or greater:**

- 1) At all vertical or horizontal changes in direction except where horizontal curves are proposed in the pipeline and the pipe manufactured with bevels for that purpose.
- 2) At junctions where the intersecting branch line is greater than half the diameter of the main being tapped.
- 3) An integral riser for a catch basins and manholes, inclusive of steps in the riser section only, will be allowed as long as the main is designed and manufactured to carry the weight of the riser, grate and frame and any superimposed traffic loads. Risers shall be eccentric. If the main slope exceeds 1%, a standard manhole or manhole junction box is to be provided.

**1.1.15 LATERAL TAPS/BRANCHES (NOT PERMITTED WITHOUT JUNCTION BOX)****A. Lateral Taps:** Lateral lines may be connected directly to the main line where the line being tapped is 54-inch and larger in diameter provided:

- 1) The branch line is *less than half the main diameter*, and
- 2) Provided the centerline of the branch pipe tap is located at the spring line (vertical centerline) of the line being tapped with a vertical deviation (or offset), from the centerline of the main line being tapped, of +/- 10% of the main line diameter.
- 3) Provided access to the main line is met elsewhere along the main being tapped.

**B. Saddle connections on new or existing lines:** A saddle connection is permitted when a branch line joins a larger main. However, the saddle connection will be allowed only on pipe 60-inch diameter and larger pipe and where the branch line is *less than half the main diameter*. Otherwise, either place a manhole or construct a manhole junction box at the tie.**1.1.16 STRUCTURES IN RELATION TO STREAMS/FLOOD PLAINS:**

Storm drainage manholes, pipe, or other drainage structures shall be located so that they will not interfere with free discharge of the flood flows of the stream to which they are proposed to tie. Portions of manholes above grade subject to hydrodynamic forces of flooding shall be designed to resist the flood forces with a safety factor of 2.5. Considerations shall be given for impact from debris.

**Overland relief:** All drainageways, including overland relief pathways, must be separated from buildings. Grading plans for construction of dwellings shall show proposed grading necessary to ascertain adequate drainage and to show that overland relief will be provided for a 100-year storm. See paragraph 6-1503 Overlot Grading In Residential Areas of the *Fairfax County Public Facilities Manual*.

For other Floodplain requirements see Chapter 110, Article II, Division 2, Floodplains, Section 110-56 through 110-60 of the City Code.

#### **1.1.17 PROJECT GRADING**

All buildable areas shall be reasonably graded in such a way as to provide for positive drainage away from building sites in accordance with the applicable paragraphs of Chapter 18 of the IBC, as amended which and will be enforced by the City Code Enforcement Officials.

## Section 2 – PLAN SUBMITTALS

The purpose of this section is to establish the design procedures and criteria for storm drainage design on systems either owned or maintained by the City of Fairfax or those systems otherwise required to meet certain criteria related to stormwater management (e.g., dry or wet detention basins, Best Management Practices, etc.). It is also the purpose of this section to outline the minimal plan submittal requirements for plan review and approval of both City-owned and private Stormwater facilities, as applicable.

### 2.1 SUBMITTAL REQUIREMENTS

**7** complete sets of site plan drawings and **2** complete sets of sitework calculations shall be submitted to the City of Fairfax, Attn: City Engineer for review and approval. The submission shall include:

#### 2.1.1 CERTIFICATION REQUIREMENTS

The following certifications shall appear on the first Stormwater Management sheet in the plan set.

#### 2.1.2 DESIGNER'S CERTIFICATION

"I hereby certify that, to the best of my ability, this plan has been prepared in accordance with the latest City of Fairfax Public Facilities Manual and City Code."

Signature: \_\_\_\_\_  
Printed Name and Title: \_\_\_\_\_  
Date: \_\_\_\_\_ Registration Number: \_\_\_\_\_

#### 2.1.3 OWNER'S/DEVELOPER'S CERTIFICATION

"I/We hereby certify that all site construction, drainage and grading will be done pursuant to this plan and that the applicable Stormwater Management conditions and requirements of the City of Fairfax, the State of Virginia and the Federal Government and its agencies are hereby made part of this plan."

Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Title: \_\_\_\_\_ Date: \_\_\_\_\_

#### 2.1.4 CHECKLIST OF STORMWATER STANDARDS

**CITY OF FAIRFAX**

**SITE PLAN**

**INFORMATION PACKAGE**



Department of Community Development and Planning  
City of Fairfax, Virginia

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CITY OF FAIRFAX  
 Department of Community Development and Planning  
 Zoning Division  
 10455 Armstrong Street, Room 207A  
 Fairfax, VA 22030  
 Phone: 703-385-7820 / Fax: 703-385-7824

**November 2009**

**TO THE APPLICANT:**

Except for individual single-family home construction, a site plan is required for all site construction, including new buildings, additions, remodeling, and site renovations. The entire process, from initial submission to final approval (including bond approval) takes approximately six months. Some applications will be processed in a shorter time period, some longer, depending on the complexity of the project.

The site plan review process is initiated by the applicant's meeting with staff submission of a complete site plan and review fee. The submitted site plan is reviewed by City staff for Code compliance and then returned to the applicant for corrections. After review of the site plan the applicant will be advised of any additional approvals that may be needed to support the project (Special Exceptions, Variances, Special Use Permits, or Subdivision actions). All architectural and landscape features, and in certain instances signage, must be approved by the Board of Architectural Review, prior to completing the plan review process.

When all additionally required approvals have been obtained, the site plan can be submitted for final review. Bond and site agreements, clearing and grading permit applications, erosion and siltation agreements, and all other improvement bonds, agreements, and fees must be submitted with the final plan. The site plan will be approved by the Public Works Director when it is technically correct and all bonding and fee requirements are met. After the site plan is approved, building permits can be released.

Upon satisfactory completion of construction, a Residential Use Permit or Non-Residential Use Permit may be obtained. Bonds will be released after an as-built plan and a warranty bond are submitted, reviewed, and approved. The warranty bond will be released after passing final site inspection pending completion of the bond release process including the final site inspection of all warranty improvements.

The attached explanatory materials regarding the site plan review process will assist in preparation of your plan. If you have questions pertaining to the process, please contact the Zoning Division of the Department of Community Development and Planning at 703.385.7820.

Very truly yours,

Jack Blevins, Chief  
 Community Development Division

Department of Community Development and Planning  
 City of Fairfax, Virginia

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### IMPORTANT PHONE NUMBERS ALL AREA CODE (703)

City Utilities	385-7920
Facilities Inspector	385-7810
Fire Marshal/Building Official	385-7830
Health Department	246-2541

### Planning Director

**385-7930**

Public Works Director	385-7810
Case Manager/Coordinator	385-7820
Street Superintendent	385-7893
Zoning Administrator	385-7820
Architectural Review	385-7930

**PLEASE NOTE:** Failure to obtain City approval for changes to an approved Site Plan or to install improvements and facilities according to the City approved plan **could result in civil penalty fines and other legal remedies** available to the City.

Department of Community Development and Planning  
City of Fairfax, Virginia

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## APPLICANT'S GUIDE

TO

## SITE PLAN REVIEW AND BOND RELEASE PROCESS

Submit all Site Plans, applications and bonding documents to:

City of Fairfax  
City Hall Annex, Room 207  
Department of Community Development and Planning  
Zoning Division  
10455 Armstrong Street  
Fairfax, VA 22030

### STAGE I PRE-SUBMISSION CONTACT

- \* All applicants must contact the Division Chief for Land Use Planning at 703.385.7930 prior to submission of the site plan application and plans to discuss the land development proposal. The pre-submission contact will result in the assignment of a Project Planner to serve as the point of contact throughout the review process. **Projects are not accepted for review without the pre-submission contact.**

### STAGE II APPLICATION SUBMISSION

- \* Applications for site plan review that contain the following items are acceptable for Intake Processing:

- A. Site Plan Application
- B. E&S Application
- C. Property Owner Affidavit (printed on cover page of plan set)
- D. Submission Fee Worksheet
- E. Site Plan Checklist (printed on cover page of plan set)
- F. Notification Letter Sample
- G. Water Quality Impact Assessment & Waiver Application
- H. Tree Removal Application
- I. GIS "dxf" electronic format at final submission
- J. Plans and Preliminary Plats (each submission 10 paper copies **and** "pdf" electronic format)
- K. Draft Deed Documents
- L. Site Agreement

- \* Where applicable, any Special Exception, Variance and Special Use Permit approvals by City Council or the Board of Zoning Appeals must be obtained prior to site plan submission. The specific application requirements, forms and fees for these approvals are available from the City's website [www.fairfaxva.gov](http://www.fairfaxva.gov) or Zoning Division staff.

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City of Fairfax, Virginia

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**STAGE III SITE PLAN REVIEW**

- \* Site plans are circulated to the plan review staff in the following City departments: Public Works, Utilities, Building Code/Fire Marshal, and any other department that may need to provide staff review comments.
- \* Review comments are compiled by the Project Planner and sent to the applicant's representative for consideration. The applicant's response (in letter format to the Project Planner) to staff's comments must accompany all site plan revisions.
- \* Architectural review and approval for building designs, landscaping and screening for all zoning districts except (single-family residences outside of the Old Town Fairfax Historic District and Transition District) and certain signage must be approved by the Board of Architectural Review.
- \* Building construction plans may be submitted to the Office of Building and Fire Code Administration for review and consultation with the Plan Review prior to site plan approval. **Applications for building permits will not receive Zoning compliance review and endorsement until the final site plan approval is obtained.**
- \* Subdivisions may require preliminary and final subdivision plats to be approved by the Planning Commission or Director of Public Works prior to site plan approval. The specific application requirements, forms and fees for these approvals are available from the City's website [www.fairfaxva.gov](http://www.fairfaxva.gov) or Zoning Division staff.
- \* The final site plan revisions and documents such as bond and site agreements, clearing and grading permits, tree removal permits, floodplain permit, stormwater detention/best management practices agreements, and siltation agreements and any associated fees will be accepted for processing after obtaining all other required approvals and satisfying the Bond Submission package requirements.
- \* Documents (bond and site agreements, clearing and grading permits, tree removal permits, stormwater detention/best management practices agreements, and siltation agreements and all associated fees) will be circulated for review and approval by appropriate authorities when all requirements are met.
- \* The final site plan will be approved by signature of all agencies signature when all site plan and bonding requirements of City Code Sections 110-105 through 110-107 are met. The approved site plan will be released to the applicant once the final site plan approved by the Director has been submitted in a "dxf" format for the City's GIS update. (Additional information regarding "dxf" format is available from the City's GIS Analyst, 703.246.6331.)
- \* Building permits may be issued by the Office of Building and Fire Code Administration and street opening permits may be issued by the Department of Public Works **after the final site plan is approved.**

#### STAGE IV CONSTRUCTION

- \* A pre-construction meeting is required before ANY activity takes place on site. It is recommended that a preconstruction meeting be scheduled at least one (1) week in advance of planned start of any site activity. To schedule a preconstruction meeting, contact the Facilities Inspectors at 703.385.7828. **Failure to schedule a pre-construction meeting prior to site activity will result in a Stop Work Order by the Facilities Inspector and/or Building Code Inspector.**
- \* Written notices providing information to residents in the affected area (in most cases, one block from the construction activity) must be delivered one week before the beginning of construction activity and three days prior to any disturbance of utilities. The Facilities Inspector must be copied on all notices and a list of addresses that received notices must be provided.
- \* Following a preconstruction meeting, limited clearing is allowed for installation of erosion and sediment controls.
- \* Inspection of installed erosion and sediment controls and construction entrance is required before approval is given to begin land clearing activities.
- \* Construction noise is allowed only between the hours of 7:00 AM and 6:00 PM on weekdays and 8:30 AM and 5:00 PM on Saturday **ONLY**. No construction noise is allowed during Sunday, evening/night hours and public holidays.
- \* Work hours in the Right-of-Way are from 9:00 AM to 3:00 PM on weekdays, or as outlined in the approved ROW/Easement Permit.
- \* Right-of-Way and On-Site Construction Inspection Fees are billed at the beginning of the project. A Right-of-Way/Easement Permit is required prior to starting work in any City Right-of-Way or Easement. Each road cut requires a separate traffic control plan for the particular work zone. Payment must be received for Right-of-Way and On-Site Construction Inspection Fees before a ROW/Easement Permit will be issued.
- \* All site construction is monitored for adherence to requirements by the Facilities Inspector until the project is complete. Building construction is monitored by the Building Inspector from Code Administration.

**STAGE V BOND ADMINISTRATION**

- \* To assist in completion of the remainder of this process, a separate bonding package will be provided by the City of Fairfax Development Bond Administrator (703.385.7930).
- \* Bond reductions may be requested as the project progresses up to 80% maximum reduction of the original site bond amount. A written request for bond reduction must be submitted on company letterhead, accompanied by completed amounts as certified on the City of Fairfax Surety Value Estimate form, and associated fees paid.
- \* At the satisfactory completion of 80% of site improvements and/or within 30 days of the issuance of the permanent or temporary Certificate of Occupancy from the Office of Building and Fire Code Administration an as-built plan, formal written request (on company letterhead) for release of the site and siltation bonds and associated fees must be submitted to the City Development Bond Administrator for agency review.
- \* A temporary Residential or Non-Residential Use Permit may be issued to accommodate weather related delays for completion of **landscaping and paving only**.
- \* After approval of the as-built plan, a two-year warranty bond must be submitted for approval with the associated surety review fee. The original site and siltation bonds will then be returned to the applicant.
- \* A permanent Residential or Non-Residential Use Permit will be issued upon satisfactory compliance with all required improvements to provide safe public and emergency access.
- \* Approximately three (3) months prior to warranty bond expiration, a letter from the City Development Bond Administrator will be mailed to the applicant; however this may be initiated by the bonding agent for the developer no sooner than three (3) months prior to warranty bond expiration.
- \* The applicant will then be instructed to submit a formal request in writing (on company letterhead) for release of the warranty bond and pay the associated bond release fee. This request must be made prior to the expiration of the warranty bond.
- \* Upon satisfactory inspection by the City Public Works Department Facilities Inspector, the original warranty bond will then be returned to the applicant.

**STAGE VI AMENDMENTS TO APPROVED SITE PLANS**

- \* Changes to an approved site plan will be processed as a Site Plan Amendment.
- \* Final Design plans by **Virginia Power** for electric service must have **City Staff authorization prior to installation**.
- \* **Failure to obtain City approval of any changes or to install improvements and facilities according to the City approved plan may result in civil penalty fines and other legal remedies available to the City.**

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City of Fairfax Site Plan Checklist  
and Certification Statement

The following affidavit and checklist MUST BE PRINTED ON THE COVER PAGE and signed by a certified engineer, architect or land surveyor.

Certification for Completeness and Accuracy

I \_\_\_\_\_ do hereby certify that this site plan checklist is complete and accurate for use in staff’s evaluation of the attached site plan that is required pursuant to Section 110-101 thru Section 110-111 in the Code of the City of Fairfax.

(signature) \_\_\_\_\_ (date) \_\_\_\_\_ (SEAL)

Site Plan Checklist

All site plans MUST CONTAIN THE FOLLOWING CHECKLIST INFORMATION in the order prescribed herein. If a checklist item does not apply please indicate “N/A” and explain in “Remarks” column.

**COVER PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Engineer’s name, address and phone number	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location map at a scale not less than 1”=2000’, indicating scaled coordinates and landmark information such as names of roads and water bodies.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tax Map Number, Property Address, Project Name and Sheet Index	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Seal and Signature of a professional engineer or other certified professional	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Name and address of owner, developer and contract purchaser (if any).	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed floor area ratio and maximum permitted.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Area of parcel in square feet.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Disturbed area in square feet or acres	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Number and type of dwelling units and allowed density (if applicable)	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Number of parking and loading spaces required and proposed	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Land use actions granted or requested for.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	North arrow on all plan drawings and maps	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Scale of each drawing, map or plan	_____

**{\*Denotes items that are required in digital format “dxf” for purpose of updating the City’s GIS data.}**

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**COVER PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Date and preparation and revisions.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed gross floor area and the area of the above grade horizontal surface of any parking structure.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Landscaped open space required and proposed, zoning classification, use group classification and type of construction(Uniform Statewide Building Code).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Certificate signed by the surveyor or engineer setting forth the source of title of the Owner of the parcel(s) and the place of record of the last instrument in the chain of Title.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Property ownership affidavit (printed on plan cover sheet with signature)	

**NOTES AND DOCUMENTATION PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Documentation of approvals granted by City Council, Planning Commission, Board of Zoning Appeals, Board of Architectural Review or any other agency.	

**EXISTING CONDITIONS PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Boundary of the entire property or properties.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Horizontal dimensions in feet and decimal fractions of a foot to the closest .00-foot and all bearings in degrees, minutes, and seconds to the nearest 10 seconds.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proof of easements required for the development.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Certified topographic map of the property at a two-foot contour interval, showing existing and proposed contours and delineating the 100-year floodplain elevation.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USGS datum used for all deviations with location and elevation benchmarks.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed elevations at control points necessary to evaluate the plan.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Locations and sizes of existing:	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire lanes, "no parking", reserved parking and ADA parking.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Structures and their distance to property lines and center lines of adjacent streets.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Public streets, sidewalks, bike trails and easements on and adjacent to the site with	

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**EXISTING CONDITIONS PAGE:**

Yes	No	N/A	Description	Remarks
			rights-of-way, width of pavement, curbs, gutters, medians indicated, profiles, typical sections and pavement design.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Driveways and curb cuts on the site and adjacent properties (indicate sight distances for driveways entering public streets).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Parking and loading spaces, related driveways, walkways, drive-aisles and pavement types.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recreation areas.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fences, retaining walls and other similar structures including elevation drawings.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Guardrails, posts and other edge delineators.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Street and site lighting indicating all fixture styles, overall height, type of luminaire and footcandle and uniformity values.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Traffic controls.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provisions for refuse disposal and recycling and required screening.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stormwater management facilities including all structures (pipes, inlets, drains, grates, etc) elevations, profiles, connections to existing facilities, ground clearance, detailed design of non-standard structures, calculations for pipe capacity, detention, retention facilities and BMP's.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water and sanitary sewer facilities, including all structures (fire hydrants, meters, manholes, etc.), sizes and types of pipes, elevations, profiles, ground clearance and connections to public utility systems. (Indicate water pressure and flow capability, static pressure, residual pressure and flow in gallons per minute)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Underground and overhead electric, telephone, cable, computer, gas lines and equipment.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Angles of bulk plane where minimum angles of bulk plane are controlled by Zoning regulations.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Landscaping including a tree inventory with each tree's caliper size labeled.	

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**SITE PLAN PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Boundary of the entire property or properties.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Horizontal dimensions in feet and decimal fractions of a foot to the closest .00-foot and all bearings in degrees, minutes, and seconds to the nearest 10 seconds.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proof of easements required for the development.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Certified topographic map of the property at a two-foot contour interval, Showing existing and proposed contours and delineating the 100-year Floodplain elevation.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	USGS datum used for all deviations with location and elevation of benchmarks.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed elevations at control points necessary to evaluate plan.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Locations and sizes of proposed:	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire lanes, "no parking", reserved parking and ADA parking.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Structures and their distance to property lines and center lines of adjacent streets.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Public streets, sidewalks, bike trails and easements on and adjacent to the site with rights-of-way, width of pavement, curbs, gutters, medians indicated. Profiles, typical sections and pavement design.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Driveways and curb cuts on the site and adjacent property (indicate sight distances for driveways entering public streets).	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Parking and loading spaces, related driveways, truck turning radius, walkways, drive aisles and pavement types.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recreation areas.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fences, retaining walls and other similar structures, including an elevation drawing.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Guardrails, posts and other edge delineators.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Street and site lighting indicating all fixture styles, overall height, type of luminaire, and foot-candle and uniformity values.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Traffic controls and truck routes.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provisions for refuse disposal and recycling, and required screening.	_____

**{\*Denotes items that are required in digital format "dxf" for purpose of updating the City's GIS data.}**

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SITE PLAN PAGE:

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Storm water management facilities including all structures (pipes, inlets, drains, grates, etc.) elevations, profiles, connections to existing facilities, ground clearance, detailed design of non-standard structures, calculations for pipe capacity, and detention or retention facilities and BMPs must be shown on the Storm Water Management and Water Quality Plan pages.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Water and sanitary sewer facilities, including all structures (fire hydrants, meters, manholes, etc.), sizes and types of pipes, elevations, profiles, ground clearance, and connections to public utility systems. Indicate water pressure and flow capability, static pressure, residual pressure, and flow in gallons per minute must be shown on the Utilities Plan Page (s).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Underground and overhead electric, telephone, television, computer gas lines and equipment.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Angles of bulk plane where minimum angles of bulk plane are controlled by zoning regulation.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vertical cross-sectional view showing height of proposed structures, number of stories, location and access to underground parking, and proposed elevation of each floor, including basements.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Landscape materials, including a tree management proposal, showing existing and proposed vegetation with each tree's caliper size labeled.	

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STORM WATER MANAGEMENT PAGE(S):

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	General description of stormwater management facilities	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Project schedule, narrative, sequence of construction	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adjacent property owners	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing streets, buildings, etc.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wooded limits	

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**STORM WATER MANAGEMENT PAGE(S):**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wetland limits	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water quality buffers	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed public drainage easements shown	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Land use of surrounding areas	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Original contours (2-foot intervals)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed contours (2-foot intervals) or sufficient number of spot elevations	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actual field survey	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	City/ USGS topographical data	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing streams, lakes, etc.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Size and location of existing culverts	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Size and location of proposed culverts	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Limits of drainage area	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Limits of construction, clearing & grading	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing and proposed improvements (including utilities and protective measures)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Delineation of FEMA 100-yr Floodplain within 200ft of project, 100-yr BFE shown	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soils, including names, mapping unit, erodibility, permeability, depth, texture, and soil structure	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location and elevation of the lowest floor in all proposed and existing buildings adjacent to the floodplain	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of Stormwater Management Facilities (includes details, plan, profile, and cross sections)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Maintenance plan for stormwater management facilities	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Name and address of entity responsible for maintenance	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stormwater Maintenance Agreement	

**Calculation Requirements:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTE: Drainage structures should be designed to handle all upstream flow when the basin is fully built out	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Capacity of receiving channel downstream of channel, pipe, or basin system	

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**Calculation Requirements:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Total area, impervious area, CN, Tc, Q <sub>pre</sub> and, Q <sub>post</sub> for 2/10-yr/25-yr/100-yr storms as applicable	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Routing analysis through all detention/retention facilities	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Design flows and velocities in open channels	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soils/Geotechnical Report/Analysis (for infiltration facilities, if required)	_____

**Piped Systems:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Analyzed and designed for 2/10-yr/25-yr/100-yr Storm Primary road crossings designed for 25-yr flows and 10-yr under secondary roads and other locations	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Culverts checked for the effects of 100-yr storm. No flooding of building Structures shall result from 100-yr design flow	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy dissipater calculations	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Capacity of receiving channel downstream of channel or pipe system	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gutter spread limited to 10ft from the face of the curb	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hydraulic grade lines show 1ft below inlets	_____

**Open Channel Systems:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed channel capacity analyzed and designed for pre 10-yr storm	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel designed for 2-yr Storm without erosion and 10-yr for bank fill (liner design)	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Velocity Check (liners provided, if needed) Provide channel velocities.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Overlot grading plan.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Provide 100-yr overland relief assuming pipe system failure.	_____

**CHESAPEAKE BAY REGULATIONS PLAN PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	For any property depicted on the city's Chesapeake Bay preservation area map as a resource protection area, applicant shall determine and show on the plan the site-specific boundaries of the RPA components per code section 110-86(c). The applicant shall also submit a RPA site-specific study application available at	_____

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**CHESAPEAKE BAY REGULATIONS PLAN PAGE:**

Yes	No	N/A	Description	Remarks
			the Zoning Division or at: <a href="http://www.fairfaxva.gov/cdp/docs/RPASiteSpecificStudyApplication.pdf">http://www.fairfaxva.gov/cdp/docs/RPASiteSpecificStudyApplication.pdf</a>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water quality impact assessment is required for any proposed development or redevelopment unless the requirement is waived by the Zoning Administrator Application/waiver form is available at the Planning counter or at: <a href="http://www.fairfaxva.gov/cdp/docs/WQIAApplication.pdf">http://www.fairfaxva.gov/cdp/docs/WQIAApplication.pdf</a>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tree management plan per 110-86 (d).	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BMP narrative	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BMP maintenance notes	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BMP maintenance agreement (available at Planning counter)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Copies of any required wetland permits.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water quality calculations in accordance with Chapter 5 of the Virginia Storm-Water Management Handbook	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BMP checklists from Virginia SWM Handbook Chapter 3 Appendices B through E as applicable. Checklists can be found at: <a href="http://www.dcr.virginia.gov/soil_&amp;_water/documents/Chapter_3_Appendix.pdf">http://www.dcr.virginia.gov/soil_&amp;_water/documents/Chapter_3_Appendix.pdf</a>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	* Total number of acres served by proposed or existing BMP	

**{\*Denotes items that are required in digital format “dxf” for purpose of updating the City’s GIS data.}**

**Performance Standards of Chesapeake Bay Regulations:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Maximize rainwater infiltration.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reduce the land application of nutrients and toxics.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Implement measures to ensure no net increase in nonpoint source pollution from new development and a ten percent reduction over existing conditions from redevelopment (allowable loadings are based on the city’s 45 percent average	

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- land cover condition- refer to Section 110-84(b)(7.)
- ☐ ☐ ☐ Minimize erosion and sedimentation potential.
- ☐ ☐ ☐ Limit land disturbance and preserve indigenous vegetation to the maximum extent practicable, consistent with the use or development proposed.

**EROSION AND SEDIMENT CONTROL PLAN PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>An erosion and sediment control plan including:</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Limits of clearing and grading.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing drainage patterns.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical erosion areas.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Locations of erosion and sediment controls and stormwater management practices to be used.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Any off-site land-disturbing activities.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detail drawings of structures to be used.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A schedule of regular inspections and maintenance.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Erosion and sediment control narrative including descriptions of:</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Project.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing topography, vegetation and drainage.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show all off-site drainage areas that flow to or from the site.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Neighboring areas such as streams, lakes, residential areas, roads, and the like that might be affected by the land disturbance.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Any off-site land-disturbing activities.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soils, including names, mapping unit, erodibility, permeability, depth, texture and soil structure.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Areas on the site that have potentially serious erosion problems.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Methods which will be used to control erosion and sedimentation.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Specifics regarding permanent stabilization of the site.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Increases in stormwater runoff and strategies to control runoff.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Design of temporary sediment basins, permanent stormwater detention basins, diversions, channels, and the like, including calculations supporting proposed design and for pre- and post-development runoff.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Maintenance plan for E&S control.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	List minimum E&S standards 1 through 19 and how they are met.	

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**LANDSCAPING PLAN PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The following data in tabular form:	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tabulation of tree canopy on the site at 10-year maturity and minimum required.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Required number of landscaped parking islands.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Buffer requirements- include fence detail and dumpster screening.	

**FIRE LANE PLAN PAGE:**

Yes	No	N/A	Description	Remarks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A fire protection plan including:	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location, width and radius of all existing and proposed fire lanes.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of all fire lane signage.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of all structures, denoting area, height, use group, construction type and sprinkler system if present.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of alarm annunciator, if present, and key repository.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of all existing and proposed fire hydrants, including connection to water mains.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of all existing and proposed fire lanes and fire department connections including identification.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire flow data, showing flow available at 20 PSI residual.	

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**PROPERTY OWNERSHIP AFFIDAVIT  
(To be printed on the plans)**

Section 107.3 of the Virginia Uniform Statewide Building Code (VUSBC) requires that all permit applications list the full name and address of the owner of the property for which a permit is being obtained. The City of Fairfax verifies property ownership prior to permit issuance. In certain circumstances, City records will reflect property ownership that is different from that appearing on a permit application. (Discrepancies most commonly occur when a company meets the definition of "owner" as found in VUSBC, but does not have title to the property or when the submission of an application occurs shortly after a transfer of ownership which has not yet been recorded in the City's real estate files.) In such cases it is the responsibility of the owner to provide evidence of property ownership prior to issuance of the permit. This affidavit provides an opportunity for individuals and companies to certify that under the definition of "owner" found in the VUSBC they are the owners of the property for which the application is being submitted. Completed affidavit forms may be submitted to the Zoning Administrator in lieu of providing other documentation such as settlement papers. This affidavit must be completed by the property owner listed on the application and must be submitted prior to permit issuance. If you have any questions, please call the Site Plan Coordinator at 703 385-7892 prior to signing this form. Copies of signed affidavits are unacceptable.

**(Please Print or Type)**

**"Owner"** as defined in the current edition of the VUSBC, means "the owner or owners of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, or lessee in control of a building or structure."

I, \_\_\_\_\_, hereby swear under oath that, to the best of my knowledge, the following statement is true. Pursuant to the definition of "owner" found in the current edition of the VUSBC, the individual or company listed below:

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

Is the owner of the property located at \_\_\_\_\_ Lot # \_\_\_\_\_ and as such may apply for a permit as the owner in accordance with section 107.3 of the VUSBC.

\_\_\_\_\_  
Signature Title Date

STATE/DISTRICT OF \_\_\_\_\_:

CITY/COUNTY OF \_\_\_\_\_:

I, \_\_\_\_\_, a Notary Public in and for the aforesaid State/District hereby certify that \_\_\_\_\_ appeared before me in the State/District and City/County aforesaid and executed this affidavit on this \_\_\_\_\_ day of \_\_\_\_\_, 2\_\_\_\_.

\_\_\_\_\_  
Notary Public/Registration #

My Commission Expires the \_\_\_\_\_ day of \_\_\_\_\_, 2\_\_\_\_.  
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City of Fairfax, Virginia

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## **CITY OF FAIRFAX NOTES TO BE INCLUDED ON THE SITE PLAN**

### **PERMITS**

1. A street opening permit is required for any work in a City right-of-way or easement. The permit can be obtained from the Public Works Department. For information, call 385-7983 or 385-7828.
2. All sidewalks, curbs, gutters, driveways, streets, storm pipes, water lines, sanitary sewer, endwalls and rip-raps must be inspected by the City. All work in the City streets will be performed Monday-Friday between the hours of 9:00 a.m. and 3:00 p.m. No work is to be performed on weekends or holidays unless pre-approved by the Director of Public Works.
3. Inspections performed by the Facilities Inspector will require a four-hour notice prior to inspections.

### **GENERAL STANDARDS**

1. The Public Works Director must be notified one week prior to pre-construction conference, one week prior to commencement of land disturbing activity and one week prior to final inspection.
2. A preconstruction meeting will be required three days prior to any construction. Contractors will notify the Public Works Department or Facilities Inspector for all work done on site and off site one day prior to starting.
3. The contractor shall provide adequate means for parking construction equipment and provide employee parking on site.
4. All construction shall conform to the latest City of Fairfax standards, Virginia Department of Transportation and the Virginia Sediment & Erosion Control current specifications, except as shown or altered by these plans.
5. Traffic signs found to be in the way at construction sites shall be removed or relocated only by personnel in the Sign & Signal Crew of the Public Works Department at the contractor's request. Any contractor found responsible for moving City property without permission will receive a summons.
6. All building construction shall be in accordance with the current edition of the Virginia Uniform Statewide Building Code. Permits and inspections for building, electrical, plumbing, mechanical and fire protection work are obtained from the Office of Code Administration, 385-7830.
7. Private fire mains require a permit from the Office of Code Administration. Permit application must include details of installation as specified in NFPA-24. An approved site plan is not a permit to install fire mains.
8. No portion of any building shall be occupied until a certificate of occupancy has been issued by the Building Official and a use permit by the Zoning Office.
9. No building, except additions or accessories to existing dwellings, shall proceed beyond first floor level until the location of the footing and walls as shown on a plat certified by a land surveyor has been approved by the Zoning Administrator.

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10. An as-built plan must be submitted within 30 days after completion of all construction.
11. Temporary structures, construction trailers and demolition require permits from the Office of Code Administration prior to start of work or installation.
12. Adequate emergency vehicle access shall be maintained at all times. A hard surfaced, all-weather roadway shall be provided to within 50 feet of all structures and any location where combustible materials are stored.
13. City ordinance permits construction noise, including excavation, between the hours of 7:00 am and 6:00 pm on weekdays and 8:30 am and 5:00 pm on Saturdays and federal and state holidays ONLY. It shall be the responsibility of the developer to ensure that all contractors and subcontractors comply with this ordinance.
14. The Developer shall be responsible for ensuring compliance with City Code sections limiting growth of grass and weeds to six inches in height.

## CONSTRUCTION

1. All subgrade and sub-base material shall be compacted to 95% of theoretical maximum density as determined by A.A.S.H.O. T-99 method A within plus or minus 20% of optimum moisture for the full width of any dedicated right-of-way and all townhouse, apartment, condominium, commercial and industrial parking lots (including storm sewer, sanitary sewer and water).
2. Compaction test shall be performed by the contractor. Subgrade for curb, gutter and sidewalk shall be every 50 feet; sub-base will be alternated every 25 feet. Driveways require two tests on subgrade and sub-base. Copy of results is required prior to placing any type of material. VTM-1 correction also must be used. All structures require two tests on subgrade and sub-base.
3. Compaction tests for roadways shall be performed by the City only, unless approved by the Public Works Director. Compaction tests for all building pads must be submitted to the office of Code Administration for review and approval.
4. All underground utilities within the street right-of-way shall be installed to the required distance beyond the right-of-way.
5. Storm sewer and culvert pipe shall be reinforced concrete pipe to conform to the current A.A.S.H.T.O. designation M170, unless otherwise designated on the plans. Class II pipe is permitted beyond the limits of street rights-of-way. Class III pipe is required within the limits of the rights-of-way.
6. All curb and gutter shown on plans and not in profiles shall be on straight tangent grades. The contractor shall round all vertical breaks with smooth spline curbs.
7. All pavement placed on City right-of-way shall have a mix design approved prior to placing material and a density test performed during placement.
8. Street signs and markings shall be installed by the developer at all street intersections in a location to be determined by the Director of Public Works. Private access ways and alleys shall be clearly designated as such by a sign at every entrance from a public street, stating "private street, privately owned and privately maintained". All street markings and signage will conform to City of Fairfax standards and the Manual of Uniform Traffic Control, per the Street Superintendent.

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9. C.B.R. test is required for actual determination of required sub-base thickness prior to construction. Depth of sub-base is based on subgrade C.B.R. value of 10. Where C.B.R. value is less than 10, one-inch of sub-base or base material shall be added for each point below 10 for on site and off site and shall be reviewed by the City of Fairfax for special design.

10. All construction must comply to the Code of Virginia 36-98 and 36-99 by reference as part of the Uniform Statewide Building Code of Virginia, the final fair housing accessibility guidelines (24 CFR Chapter I) and the Americans with Disabilities Act accessibility guidelines (28 CFR, part 36) as per site and right-of-way work compliance.

11. Provide proper distance from back of sidewalk to building for stoops and steps, and the like.

12. All roofs, paved areas, yards, courts and courtyards shall be drained into a separate storm sewer or a combined sewer system.

## ENVIRONMENTAL

1. All erosion siltation control to be installed prior to starting project to conform to the current Virginia Erosion and Sediment Control Manual.
2. The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering the City of Fairfax rights-of-way. It is the contractor's responsibility to clean streets and alley dust and to take whatever measures necessary to ensure that the road is maintained in a clean and dust-free condition at all times.
3. It shall be the contractor's responsibility to perform the work in such a manner to prevent the washing of any topsoil, silt, or debris onto adjacent properties.
4. If the presence of asbestos is suspected in the soil, the contractor must contact the Air Pollution Control Division of the Fairfax County Health Department at 246-2541.
5. Onsite storage of fuel shall be limited to diesel fuel tanks not over 660 gallons capacity. Tanks shall be of a listed type and shall be provided with approved secondary containment, impact protection and placarding. A minimum 2A-40BC fire extinguisher shall be provided in the vicinity of the refueling area. A permit for combustible liquid storage shall be obtained from the Office of Code Administration, 385-7830. Fuel shall not be placed in onsite storage tanks until the installation has been inspected and approved.
6. Onsite repair of vehicles and equipment shall be limited to replacement of damaged belts, hoses and tires. Any spill of fuel, oil, hydraulic fluid or anti-freeze greater than one gallon must be reported to the Office of Code Administration at 385-7830. All spills must be cleaned up promptly and in an approved manner.
7. The Owner shall be responsible for ensuring compliance with City Code sections regarding health and safety menaces, including accumulations of water, storage of material, construction debris and security of the site.
8. The link to the asbestos information and map on the Fairfax County website  
<http://www.fairfaxcounty.gov/hd/asb/>
9. **Prior to the start of any site grading work, the developer or owner shall provide the city of Fairfax Public Works Facilities Inspector with documentation that a VSMP permit has been issued by the VA Department of Conservation and Recreation. The VSMP permit requires that a Stormwater Pollution Prevention Plan (SWPPP) be kept at the construction site at all times.**

## LANDSCAPE

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1. The area surrounding all trees, shrubs and groundcover shall be topped with two inches of shredded hardwood bark mulch.
2. No changes shall be permitted to the plant list unless approved by the City of Fairfax.
3. Trees shall be classified as per "American Standard for Nursery Stock" as adopted by the American Association of Nurserymen. Plant material below this standard shall not be considered.
  - a) All plants must conform to requirements per plant list;
  - b) All plant materials must be nursery grown stock;
  - c) All trees must be well branched, full crown.
4. At least 5 days before being planted, the Site Plan Coordinator shall be notified that plants are available for inspection.
5. No person shall remove or destroy any tree which is five (5) inches or greater in caliper, measured six (6) inches above ground level, on any lot greater than one-half (1/2) acre without first obtaining a tree removal permit from the Zoning Administrator. Any tree removed, damaged or destroyed will be replaced at the discretion of the Zoning Administrator.

#### **DEPARTMENT OF UTILITIES STANDARD NOTES**

##### **GENERAL**

1. All water mains and sanitary sewers shall be constructed in accordance with the current City of Fairfax Standards and Specifications.
2. Easements for all sanitary and water mains shall be 10' unless otherwise noted.
3. Sanitary sewers and water mains shall maintain a minimum of 15' horizontal separation from proposed or existing buildings.
4. No landscaping or other utilities (i.e. gas, phone, cable, etc.) are permitted in the water and sewer easements, except at crossings.
5. Contractor shall request pre-construction meeting and inspection by the City of Fairfax Department of Public Works (703-385-7828) three days prior to commencing construction of any water and sewer mains.
6. A permit for installation of sanitary sewers, fire hydrants and water mains shall be obtained from the Department of Public Works.
7. Prior to any water main installation, all required sanitary sewers, including laterals, and storm sewers must be installed and backfilled to 95% compaction.
8. Water and sewer laterals not within an easement require plumbing permits and inspections from the Office of Code Administration. The inclusion of these items does not constitute a permit.

##### **WATER MAIN**

1. Water services shall maintain a minimum of 6' horizontal separation from sanitary laterals.
2. All hydrants and meter corks shall maintain 5' horizontal separation from edge of driveway aprons, when possible.
3. Water mains shall maintain a minimum 2.5' horizontal separation from edge of gutter pan, except at designated crossings.
4. All water mains less than or equal to 12" in diameter shall be class 52 ductile iron pipe with cement lining. All water mains greater than 12" in diameter shall be class 54 ductile iron pipe with cement lining.
5. A 2" detectable marking tape shall be placed 2' above all water mains.
6. Contractor is responsible to install type K Copper with AWWA approved corporation stop and angle valve for all water service lines smaller than or equal to 2", and extend a 5' section (Pig Tail)

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beyond the meters. Meter boxes, yokes and dual check valves will be provided by the City of Fairfax Department of Utilities.

7. Pressure testing and disinfection of water mains shall be in accordance with AWWA C-600 and AWWA C-601 Standards, respectively.

8. Water valves shall be operated by the Department of Utilities' staff only (703-385-7991 or 7920; after hours call 703-385-7924).

9. Water valve box lids shall have the word "Water" or the letter "W" cast in them.

10. Fire line valve box lids, at connection to city water main, shall have the word "Fire" cast in them. Minimum fire valve size is 6".

11. No blasting is permitted within city limits and within 25' of city's transmission main in Fairfax and Loudoun Counties.

12. All water mains shall have a minimum cover of 4'.

13. Proposed fire hydrants shall be painted by the contractor per city specifications. The paint shall consist of two additional coatings on top of the coating provided by the hydrant manufacturer. Paint name and numbers are:

Safety Red – B54 R38 617-4064

Pure White – B54 W 101 7907-99993

14. Proposed and existing fire hydrants that have been taken off line for construction reasons of have not been approved for use by the city's inspector shall be "bagged" to alert the Fire Department.

#### **SANITARY SEWER:**

1. Sanitary sewers shall be PVC DR-25 per AWWA C-900, unless otherwise noted.

2. Sanitary sewer laterals shall be 4" PVC DR-25 between the main and the property line and shall enter the main at 90 degrees. A cleanout shall be installed at the property line.

3. A 2" detectable metal marking tape shall be placed 3-feet above all sanitary sewers.

4. The Department of Utilities shall inspect sanitary sewers by a camera after the lines are put in service.

5. Finish grade shall drain away from manholes located outside of pavement areas.

6. Top of manholes located outside of pavement areas shall be 3" above final grade, except in established lawns where it shall match the final grade.

7. Manholes shall have bituminous coating on the outside walls.

8. All sanitary manhole lids shall be heavy duty and shall have the words "Fairfax City Sewer" cast in them.

9. Drop manholes shall have an 8" inside drop pipe.

10. Manholes in 100 yr. Flood plain shall have watertight lids.

11. All testing is provided by the contractor, as directed by the city inspector.

## **CITY OF FAIRFAX**

### **NOTES TO BE INCLUDED ON THE SITE PLAN**

#### **NOTES TO BE INCLUDED ON RESIDENTIAL PLANS**

No building shall proceed beyond the first floor level until the location of the footing and walls as shown by certified surveyor's plat thereof, has been approved by the Zoning Administrator.

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It shall be the developers and/or owners responsibility to perform the work in such a manner to prevent the washing of topsoil, silt, or debris onto adjacent properties.

It shall be unlawful for any person to engage in land disturbing activities of two thousand five hundred (2,500) square feet or more for any purpose until a permit is issued by the plan-approving authority.

All Erosion Control to be installed prior to starting project to conform to the current Virginia Erosion Control Manual.

A street opening permit is required for any work in the City right-of-way or easement. The permit can be obtained from the Public Works Department. For information call 385-7983 or 385-7828.

All on-site utilities shall be installed underground in accordance with city and applicable utility company standards.

No portion of the building shall be occupied until a certificate of occupancy has been issued by the Zoning Administrator.

The developer shall provide adequate means of cleaning mud from trucks and/or equipment prior to entering the City of Fairfax rights-of-way. It is the developers responsibility to clean streets and to take measures necessary to ensure that the road is maintained in clean and dust-free condition at all times.

The developer shall provide for adequate storm drainage so that the proposed improvement of the property does not direct concentrated flow to adjoining properties. The drainage shall be approved by the City Building Inspector and Facilities Inspector prior to issuing the occupancy permit.

Each development shall provide for the planting or retention of trees on the site to the extent that, at a maturity of ten years, the minimum lot coverage shall be twenty (20) percent for a site zoned R-2, R-3, RT-6, RT or any other residential site zoned three (3) to ten (10) units per acre.

Any application proposing to remove or destroy existing trees in conjunction with any land development activity shall submit a tree management plan containing such information as deemed necessary by the zoning administrator (Sec. 26-62(c)).

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**CITY OF FAIRFAX**  
**Site Plan Review Fee Calculation Sheet**

**Project Name:** \_\_\_\_\_ **Site Plan #** \_\_\_\_\_

<b><u>Site Plan Review Fees (# 316462)</u></b>			
<b><u>Category</u></b>	<b><u>Rate</u></b>	<b><u>Measurements</u></b>	<b><u>Fee</u></b>
Base Fee \$6,600 (major); 2,750 (minor); 1,100 (amendment)			
Second and Subsequent Revision \$550 each additional submission			
Bituminous Surface	\$0.44/sq.yd.	_____	_____
Sidewalk	\$0.77/lin.ft.	_____	_____
Curb & Gutter	\$0.77/lin.ft.	_____	_____
Header Curb	\$0.77/lin.ft.	_____	_____
Storm Drainage	\$3.85/lin.ft.	_____	_____
Sanitary Sewer	\$2.00/lin.ft.	_____	_____
Water	\$2.00/lin.ft.	_____	_____
Required Screening	\$2.00/lin.ft.	_____	_____
Overlot Grading	\$220 per division of land or disturbed acre or fraction thereof (whichever is greater); plus \$100 per inspection conducted by the Dept. of Public Works	_____	_____
Tree Management	\$110 per division of land or disturbed acre or fraction thereof (whichever is greater)	_____	_____
Water Quality Impact Assessment Review	\$330	_____	_____
(\$110 per individual residential lot)			
<b>Site Plan Review Fee Total</b>			

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Erosion & Sediment Plan Review (#313310)

\$225 up to ½ acre of disturbed land, includes 1 site inspection; each additional inspection is \$100 over ½ acre of disturbed land \_\_\_\_\_

\$500 per acre or fraction thereof (rounded to the nearest acre) \_\_\_\_\_

(Includes one (1) inspection, each additional \_\_\_\_\_  
Inspection \$100)

Re-inspection following violation @ \$200; \$300 if a stop work order has been issued (per inspection)

After-Hours Inspection fee @\$200 minimum up to 4 hours

Overtime Related to Inspections @ 150

Rescheduling fee for site inspection \$45

RPA delineation/determination \$275 \_\_\_\_\_

=====

**Surety Review (#316466)**

Performance bond, letter of credit, cash escrow:

Less than \$100,000 \$275.00 each \_\_\_\_\_

\$100,001-300,000 \$550.00 each \_\_\_\_\_

> \$300,000 \$800.00 each \_\_\_\_\_

Request for reduction \$275.00 each \_\_\_\_\_

Request for replacement/

Release \$275.00 each \_\_\_\_\_

**TOTAL REVIEW FEE:** \_\_\_\_\_

Fee

computed

by: \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title

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\*Please review City fee schedule for additional fees that may apply to your project.

**CITY OF FAIRFAX  
SITE PLAN REVIEW NOTIFICATION**

The Zoning Office requires the applicant to notify by certified mail the owners of each property abutting or across the street from the subject property informing them that the site plan has been submitted and will be considered for approval not less than ten days after receipt of notice.

**SAMPLE NOTICE:**

Date

Dear Property Owner:

Pursuant to Section 110-102(e) of the City of Fairfax Zoning Ordinance, you are hereby notified that a site plan has been submitted to the Zoning Office for consideration.

You are invited to review this site plan in the Zoning Office, Room 207, City Hall. Should you have any objections to this plan, you must file your objections, in writing, with the Zoning Office within ten days after receipt of this notice.

Site Plan name and number  
Type of use  
Address

Applicant's signature and address

cc: Zoning Administrator/Case Manager

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**CITY OF FAIRFAX  
DEPARTMENT OF COMMUNITY DEVELOPMENT AND PLANNING**

**Water Quality Impact Assessment (WQIA) and Waiver Application**

The Water Quality Impact Assessment requirements are described on the following pages. Please review these requirements, compute your WQIA calculations (or waiver request) and complete the application provided with these instructions. The request to waive the requirement for a WQIA can be made by completing Section II.

Submit the completed application, WQIA calculations (or waiver request) and review fee along with the site plan application and fees to the Department of Community Development and Planning, Zoning Division.

**WQIA review fees: \$110 per individual residential lot or \$330 for other development  
Account #316462**

Project Name: \_\_\_\_\_

Project Address: \_\_\_\_\_

Tax Map Number: \_\_\_\_\_

Property Owner: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Applicant (If different from Owner): \_\_\_\_\_

Address: \_\_\_\_\_

E-mail: \_\_\_\_\_

Engineer: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Land Surveyor (if different): \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Wetlands Expert (if different): \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

The Water Quality Impact Assessment is conducted to identify the impacts of proposed development on water quality and lands within resource protection and resource management

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areas; to ensure that where development does take place it is located on those portions of a site and in a manner that is least disruptive to the natural functions of the land and to specify mitigation measures to address water quality protection.

The applicant shall submit a WQIA in accordance with Section 110-85(b) for:

1. Any proposed land disturbance , development or redevelopment within a resource protection area including any buffer area modification or reduction as provided for in section 110-84; or
2. Any proposed development or redevelopment in the resource management area that may significantly impact water quality due to the unique characteristics of the site or intensity of the proposed use or development.
3. Upon determination that the proposed development or redevelopment would not significantly impact water quality, the zoning administrator may waive this requirement as stated in subsection 110-80(e).

I. Development Characteristics

*You must submit either a minor or major WQIA for your project unless you receive a waiver. The below conditions will determine whether you submit a major or minor WQIA.*

Submit a **Minor WQIA** if you answer "Yes" to either of these development characteristics (Section 110-85(c)):

\_\_\_\_\_ 5,000 square feet of disturbance or less

\_\_\_\_\_ Encroachment onto the landward 50 feet of the 100-foot buffer area

(Skip to Section III, Minor WQIA Requirements)

Submit a **Major WQIA** if you answer "Yes" to any of these development characteristics (Section 110-85(d)):

\_\_\_\_\_ Over 5,000 square feet of disturbance

\_\_\_\_\_ Encroachment onto the seaward 50 feet of the 100-foot RPA buffer area

\_\_\_\_\_ Location in the resource management area and is deemed necessary by the Zoning Administrator.

(Skip to Section IV, Major WQIA Requirements)

II. WQIA Waivers

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\_\_\_\_\_ Check here if you plan to submit a WQIA waiver request.

To submit a WQIA waiver request, attach a report detailing how the proposed development or redevelopment does not significantly impact water quality.

### III. Minor WQIA Requirements (Section 110-85(c))

The minor WQIA calculations will demonstrate that the remaining buffer area and best management practices will result in removal of no less than 75 percent of sediments and 40 percent of nutrients from post development stormwater runoff.

Requirements for a minor WQIA scaled site drawing include:

- 1) Location of the components of any RPA, including the 100 foot buffer area;
- 2) Location and nature of proposed improvements, including:
  - a. Type of paving material;
  - b. Areas of clearing or grading;
  - c. Location of any structures, drives, or other impervious cover; and
  - d. Sewage disposal systems or reserve drain field sites;
- 3) Type and location of proposed best management practices to meet the required general performance standards specified in Section 110-84;
- 4) Location of existing vegetation on site, including the number and type of trees and other vegetation to be removed to accommodate the encroachment or modification; and
- 5) A revegetation plan that supplements the existing buffer vegetation in a manner that provides for pollutant removal, erosion and runoff control.
- 6) Certification of all required information as complete and accurate by a Class IIIB certified land surveyor and a certified wetlands delineator.

### IV. Major WQIA Requirements (Section 110-85(d))

Requirements for a major WQIA include:

- 1) All of the information required in a minor WQIA (Section III above);
- 2) Hydrological element that describes:
  - a. Existing topography;
  - b. Estimates of soil characteristics and potential for erosion;
  - c. Hydrology of the area;
  - d. Proposed mitigation measures; and
  - f. Listing of requisite permits with permit or application status.
- 3) Landscape element that describes:
  - a. Existing trees required to be identified as part of a Tree Management Plan in accordance with subsection 110-252(c);
  - b. Limits of clearing and grading;

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- c. Trees and indigenous vegetation that are to be preserved within the disturbed area;
  - d. Measures to be taken to protect vegetation, proposed plantings and other vegetative measures used to enhance water quality; and
  - e. Proposed construction schedule that includes all activities related to clearing, grading and proposed plantings.
- 4) Such other measures as deemed necessary by the Zoning Administrator to ensure the impact to water quality can be accurately predicted; and
- 5) Certification of all required information as complete and accurate by a Class IIIB certified land surveyor and professional wetlands delineator.

V. Evaluation Procedure (Section 110-85(f))

**Minor WQIA**

*The Zoning Administrator shall determine if any proposed modification or reduction to the buffer area is consistent with the provisions of this division and make a finding based upon the following criteria:*

110-85(f)1.	Minor WQIA Criteria	Satisfied (Y/N)
a.	The proposed encroachment is necessary and there is no other location on site to place improvements without disturbing the buffer area.	
b.	The impervious surface is minimized.	
c.	The proposed best management practices, where required, achieve the requisite reductions in pollutant loadings.	
d.	The development, as proposed, meets the purpose and intent of this division.	
e.	The cumulative impact of the proposed development, when considered in relation to other development in the vicinity, both existing and proposed, will not result in a significant degradation of water quality.	
f.	Any other information deemed necessary by the Zoning Administrator.	

**Major WQIA**

*The Zoning Administrator shall determine if the proposed development is consistent with the purpose and intent of this division and make a finding based upon the following criteria:*

110-85(f)2	Major Water Quality Criteria	Satisfied (Y/N)
------------	------------------------------	-----------------

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a.	The disturbance of any wetlands is minimized.	
b.	The development will not result in significant disruption of the hydrology of the site.	
c.	The development will not result in significant degradation to aquatic life.	
d.	The development will not result in unnecessary destruction of plant materials on site.	
e.	Proposed erosion and sediment control concepts are adequate to achieve the reductions in runoff and prevent offsite sedimentation.	
f.	Proposed stormwater management measures are adequate to control the stormwater runoff to achieve the required performance standard for pollutant control.	
g.	Proposed revegetation of disturbed areas will provide optimum erosion and sediment control benefits.	
h.	The design and location of any proposed drain field will be in accordance with the general performance standards outlined in section 110-84.	
i.	The development, as proposed, is consistent with the purpose and intent of this division.	
j.	The cumulative impact of the proposed development, when considered in relation to other development in the vicinity, both existing and proposed, will not result in a significant degradation of water quality.	

WQIA Approved/ Waiver Approved

\_\_\_\_\_  
Special Projects Engineer

\_\_\_\_\_  
Date

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## Attachment B

### SITE PLAN ORDINANCE

Below is a copy of the Site Plan Ordinance, which is an excerpt of Chapter 110 of the City Code. Chapter 110 contains the City's zoning regulations and the applicant is responsible for knowledge of all zoning regulations applicable to the proposed development. Copies of Chapter 110 in its entirety can be purchased from the Zoning Office, Room 101, City Hall.

#### DIVISION 4. SITE PLANS<sup>1</sup>

Section 110-101. Development of land use requiring a site plan.

- (a) A site plan is required for any use or development of property located in any zoning district, except:
  - (l) Single-family detached dwellings, related accessory structures and any special use not requiring physical alterations to the lot or building.
  - (2) Temporary public uses which do not exceed thirty (30) days in duration.
- (b) No building permit or certificate of occupancy shall be issued for a development requiring a site plan until the site plan has been approved.

Section 110-102. Procedure

- (a) All site plans which are appropriately submitted and conform to the standards and requirements set forth in this chapter shall be approved by the plan approving agent designated by the city manager, hereafter referred to as the agent.
- (b) The property owner or his designee shall submit to the zoning administrator a completed application and twelve (12) prints of the site plan.
- (c) Site plans shall be prepared and certified by an engineer, architect, land surveyor or landscape architect duly authorized to practice by the Commonwealth of Virginia. No person shall prepare or certify any portion of a site plan which is outside the limits of his professional expertise and license.
- (d) Site plans shall be prepared at a scale of not less than one (l) inch equals fifty (50) feet and shall be submitted as twenty-four (24) by thirty-six (36) inch blue or

<sup>1</sup> Editor's note: Ord. No. 1986-29, adopted June 24, 1986 amended Div. 4 in its entirety to read as herein set forth. Prior to such amendment, Div. 4, consisting of Sections 26-20--26-28 and 26-30, pertained to similar subject matter and was derived from: ordinance of Dec. 7, 1960, Section 3; ordinance of Dec. 2, 1969; ordinance of Feb. 5, 1974; Ord. No. 1975-14, adopted April 8, 1975; Ord. No. 1978-2; Ord. No. 1980-13, Section 2, adopted July 15, 1980; Ord. No. 1984-10, adopted Sept. 11, 1984; and Ord. No. 1984-27, adopted Dec. 18, 1984.

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black line copies unless excepted by the agent. Each site plan shall contain all information required by this chapter.

- (e) With the site plan, the applicant shall submit applicable fees consistent with the adopted fee schedule and certified mail receipts from notices sent to the owners of each property abutting or across the street from the subject property informing them that the site plan has been submitted and will be considered for approval not less than ten (10) days after receipt of the notice. If the adjacent development is of condominium ownership, then notification sent to the condominium association shall be sufficient to satisfy this provision.
- (f) Written comments pertaining to a site plan may be filed with the zoning administrator by any interested party within the period prescribed in the notice.
- (g) The site plan shall be forwarded to the board of architectural review pursuant to section 110-1072 if the subject site is located in the Old and Historic District.
- (h) The agent shall notify the applicant in writing of the action to approve or deny the site plan and shall forward a copy to the zoning administrator. In the event that a site plan is denied, the agent shall indicate the reasons for denial. The agent's decision may be appealed to the board of zoning appeals in accordance with section 110-1105 et seq. (Ord. No. 1986-29, 6-24-86)

#### Section 110-103. Required information.

All site plans shall contain the following information:

- (1) Location of tract by an insert map at a scale of not less than one inch equals two thousand feet (1" = 2000'), indicating scaled coordinates referred to in U.S.C. & G.S., state grid north and such information as the names and numbers of adjoining roads, streams and bodies of water, railroads, subdivisions, towns, and districts or other landmarks sufficient to clearly identify the location of the property.
- (2) Name and address of the owner or developer and contract purchaser (if any), north point, scale of the drawing and date of preparation and revisions.
- (3) Boundary of the entire tract by courses and distances with reference to true meridian or state grid system and area of the tract.
- (4) All horizontal dimensions shown on the site plan shall be in feet and decimal fractions of a foot to the closest one hundredth of a foot (.00), and all bearings in degrees, minutes and seconds to the nearest ten (10) seconds.
- (5) Certificate signed by the surveyor or engineer setting forth the source of title of the owner of the tract and the place of record of the last instrument in the chain of title.

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- (6) Certified topographic map of the parcel at a minimum two-foot contour interval, showing existing and proposed contours and delineating the one-hundred-year floodplain elevation, if applicable.
- (7) USGS datum used for all elevations with location and elevation of benchmark shown.
- (8) Locations and dimensions of existing and proposed:
  - (a) Structures on the site showing distance to lot lines and centerlines of adjacent streets;
  - (b) Streets and easements on and adjacent to the site with rights-of-way and pavement widths;
  - (c) Driveways and curb cuts on the site and adjacent properties;
  - (d) Parking and loading areas; all off-street parking, related driveways, loading spaces and walkways, indicating type of surfacing, size, angle of stalls, width of aisles and location, height and intensity of proposed lighting;
  - (e) Sidewalks, trails and open space;
  - (f) Median strip openings and their relationship to the site;
  - (g) Water and sanitary sewer facilities, indicating all pipe sizes, types, and grades and the location of connection to public utility systems;
  - (h) Underground electric, telephone and television cables, both on-site and in adjacent rights-of-way.
- (i) Street and site lighting, indicating all fixture styles and heights, types of luminaire, location of fixtures, and foot candle and uniformity values.
- (9) Proposed elevations at control points such as driveways, ramps and any other locations determined by the agent to be necessary for the adequate evaluation of the plan.
- (10) The proposed location and general use of each building, including outside display areas.
- (11) Angles of bulk plane where minimum angles of bulk plane are prescribed by the provisions of this chapter.
- (12) Sufficient information to show how the physical improvements associated with the proposed development such as walkways, driving lanes, and curb and gutter

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interrelate with existing or proposed development of record on adjacent properties.

- (13) A tree management plan as required in Division 10 and a landscaping plan showing the location, number, type and size of all proposed plant material at the planting and maturity stages. The landscaping plan shall also depict all trees existing on-site prior to development which are larger than five (5) inches in diameter and which of those shall be retained.
- (14) Location, type, materials, size and height of fencing, retaining walls and other screening including an elevation drawing.
- (15) Vertical cross-sectional view showing:
  - (a) Height of proposed structures.
  - (b) Number of stories.
  - (c) Location and access to underground parking.
  - (d) Proposed grades of each floor, including basements.
- (16) Plan of each proposed parking garage level.
- (17) Additional information deemed essential by the agent to permit adequate review of the plan.
- (18) The following data in tabular form:
  - (a) Area of parcel in square feet.
  - (b) Proposed gross floor area and the area of the above grade horizontal surface of any parking structure.
  - (c) Proposed floor area ratio and maximum permitted.
  - (d) Number and type of dwelling units.
  - (e) Number of parking and loading spaces required and proposed.
  - (f) Special exceptions or variances granted or requested.
  - (g) Landscaped open space required and proposed.
  - (h) Tabulation of tree canopy on the site at ten year maturity.
- (19) Provisions for erosion and sediment control and the disposition of natural and stormwater including the proposed location, sizes, types and grades of ditches, catchbasins and pipes and connections to existing drainage systems. (Code 1978, 26-23).



#### Section 110-104. Exceptions.

The agent, after consultation with the zoning administrator, may waive the submission of some of the information required by section 110-103 if he determines that the proposed use or development may be adequately reviewed without some of the required information, if the proposed building or addition does not exceed two thousand (2,000) square feet of gross floor area and a site plan has previously been approved for the property. (Code 1978, 26-23).

#### Section 110-105. Review Standards.

In furtherance of the purposes of this chapter and to assure the public safety and general welfare, no site plan shall be approved unless the following are incorporated into the plan:

- (1) Provisions for safe and functionally efficient traffic circulation and control on the site, and access to adjacent sites and public rights-of-way;
- (2) Provisions for adequate fire protection approved by the fire marshal, and adequate water and sanitary sewer facilities approved by the director of utilities;
- (3) Compliance with design criteria, construction standards and specifications for required public improvements adopted by the Code of the City of Fairfax or by the Commonwealth of Virginia;
- (4) Provisions for pedestrian traffic and connection of proposed sidewalks and bicycle trails to the city's system where such system is existing or planned adjacent to the proposed development;
- (5) Provisions for adequate storm water management and erosion and sediment control measures as specified in this chapter;
- (6) Proof of easements required to develop or use the property as indicated in the plan;
- (7) Provisions for service roads on property bordering arterial streets where adopted city plans specifically indicated such roads. However, notwithstanding the requirements of sections 110-763, 110-783 and 110-803, no proposed structure shall be located closer than ten (10) feet from the service road right-of-way or easement line;
- (8) Dedication to the city of rights-of-way for streets, service roads (if required) and other facilities for public use (e.g., utilities and park areas), and easements necessary for their construction and maintenance;
- (9) Delineation of each "no parking," reserved parking and handicapped parking area

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on the site;

- (10) Adequate provisions for refuse disposal. If dumpsters are used for refuse disposal, then each dumpster shall be located on a concrete pad with minimum dimensions of twenty (20) feet by twelve (12) feet and screened in accordance with the requirements contained in Division 10. Refuse disposal areas shall be located so that they are accessible by a disposal truck without impeding traffic or encroaching upon required parking spaces;
- (11) The underground installation of all on-site utilities in accordance with city and Applicable utility company standards. In addition, when the proposed development will result in moving or relocating existing overhead utilities located in adjoining rights-of-way, the applicant shall be responsible for placing such utilities under ground and dedicating any additional right-of-way or easement that is necessary. Equipment such as electric distribution transformers, switchgear, meter pedestals and telephone pedestals which is normal installed above ground in accordance with general accepted utility practice for underground distribution may be so installed. Temporary overhead facilities required for construction purposes shall be permitted. The city council may grant special exceptions to modify the requirements of this provision if the applicant clearly demonstrates that the requirements pertaining to the underground placement of utilities in adjacent rights-of-way will result in an expense which exceeds five (5) percent of the total cost of the proposed construction. Special exceptions shall only be granted by city council pursuant to the procedures and limitations established for special use permits set forth in section 110-366;
- (12) Provisions for adequate site and street lighting to provide safety and security for both pedestrian and vehicular traffic. Lighting fixture style shall be compatible with the architecture of the buildings located on the site. On-site lighting shall be directed downward and inward to prevent spill light on adjacent property. No lighting fixture within or immediately adjacent to any residential district shall exceed twelve (12) feet in height, nor shall any lighting fixture located elsewhere exceed twenty (20) feet in height. The site plan shall address lighting for facilities which may require special lighting. White light sources/luminaires shall be used to provide improved color rendition, unless otherwise approved by the agent. Levels of illumination shall be consistent with the foot candles and uniformity values specified in the Illuminating Engineering Society Lighting Handbook.
- (13) Compliance with all requirements of this chapter.

#### Section 110-106. Screening

Screening from adjacent property shall be provided in accordance with the requirements contained in Division 10, Tree Preservation, Landscaping and Screening.

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(Code 1978, 26-25)

Section 110-107. Completion agreement and bond

(a) Prior to approval of any site plan, there shall be executed by the owner or developer and submitted with the site plan an agreement in form and substance as approved by the city to construct all physical improvements required by the provisions of this chapter. A bond, with surety or condition acceptable to the city, in the amount of

- (1) One hundred (100) percent of the estimated cost of all required improvements which are to be dedicated to public use or connected to a public facility; and
- (2) Twenty-five (25) percent of the estimated cost of all other required physical improvements; and
- (3) One hundred (100) percent of the estimated cost of all plant material required by this chapter or designated to be preserved in the development process.

(b) All estimates of cost shall accompany the site agreement and shall be subject to approval by the site plan approving agent. The aforesaid agreement and bond shall be provided to ensure completion of all work or improvements therein stated within the time cited in the agreement and determined by the agent. The completion time may be extended by the city manager upon written application by the owner or developer, signed by all parties to the original agreement and to the bond. The adequacy, conditions and acceptability of any bond hereunder shall be determined by a bond committee appointed by the city manager. In any case where the bond committee has rejected any such agreement or bond, the owner or developer may appeal such decision to the city council.

(Code 1978, 26-26)

Section 110-108. Inspection and supervision during installation.

- (a) The construction standards for all off-site and on-site improvements required by this division shall conform to applicable plumbing, building, electrical, fire and health codes, and other applicable laws, ordinances and regulations. The director of public works shall approve the plans and specifications for all required improvements, and shall supervise inspection of the construction of such improvements to assure conformity.
- (b) The developer or owner shall notify the director of public works not less than twenty-four (24) hours prior to undertaking construction of streets, storm sewer work and other facilities to be publicly maintained.
- (c) The developer or owner shall provide adequate supervision of all work related to the development of the site, and shall have a responsible superintendent or foreman, together with one set of approved plans, profiles and specifications,

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available at the site at all times while work is being performed. (Code 1978, 26-27)

Section 110-109. Certificates of Occupancy.

- (a) A certificate of occupancy shall be issued by the zoning administrator only for developments which conform to approved site plans.
- (b) Temporary certificate of occupancy:
  - (1) A temporary certificate of occupancy shall be issued for an approved project if remaining improvements are limited to landscaping and paving which cannot be completed because of adverse climatic conditions provided that each area to be paved has been provided with a dustless surface such as B-3 base coat and the zoning administrator has determined that the issuance of such certificate will not be detrimental to the public health, safety and welfare.
  - (2) A temporary certificate of occupancy shall also be issued for a completed section or phase of an approved project provided that it conforms to applicable regulations, it is independently functional with respect to the remainder of the project, a phasing plan has been approved, and all on-site and off-site improvements pertaining to the completed section have been completed, inspected and approved except as provided for in subsection (b)(1) of this section.
  - (3) A temporary certificate of occupancy shall be valid for a period of ninety (90) days from issuance and may be renewed for a single ninety-day period upon written application, by the owner or developer provided that all other work in progress conforms to the approved site plan and applicable requirements.
- (c) A permanent certificate of occupancy shall be issued only after:
  - (1) The owner or developer has submitted the appropriate application; and,
  - (2) All necessary inspections for on-site and off-site construction have been completed to the satisfaction of the zoning administrator; and
  - (3) A certified "as built" site plan has been filed for the project. The "as built" site plan may be a copy of the original approved site plan with an affidavit attached stating that all construction has been completed in compliance with the approved plan, or shall show all deviations from the approved plan with an affidavit attached stating that no deviations exist except those shown. The "as built" plan shall be certified by an engineer, architect or land surveyor to the limits of his license.

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- (4) The owner or developer, after completion of all off-site improvements and discharge of the performance bond, has provided a two-year warranty bond with surety equal to ten (10) percent of the original completion bond in a form satisfactory to the city. (Code 1978 26-28).

Section 110-110. Validity of approved site plans.

An approved site plan shall become null and void if no grading or construction has commenced on the site within twelve (12) months after approval. The agent may grant a single one-year extension upon written request of the applicant provided that the request is made at least thirty (30) days prior to the expiration date of the approved site plan. (Code 1978, 26-28).

Secs. 110-111—110-125. Reserved.



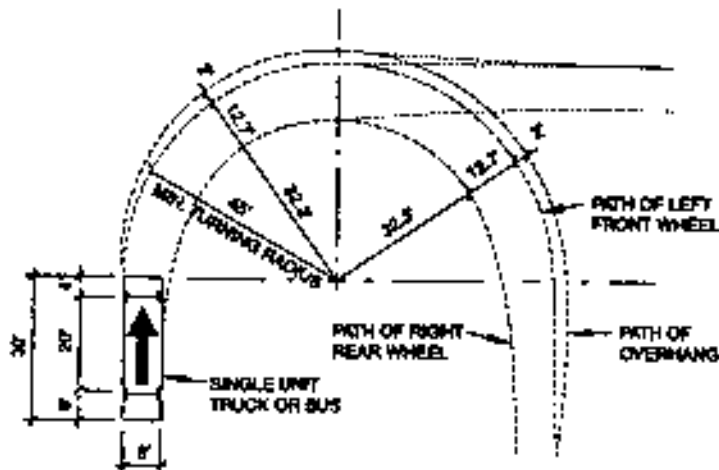
City

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**Fire and Rescue Service****Office of Code Administration**

10455 Armstrong Street  
Fairfax VA, 22030

## Bulletin



### SECTION F-3.6 Fire Lanes and Emergency Access and Roadways and Special Provisions

#### F-3.6 Designation.

The fire official shall designate fire lanes on public streets and on private property where necessary to ensure that firefighting and rescue apparatus has the required access to fire department connections, buildings and structures. Fire lanes shall have a minimum width of eighteen (18) feet or wider. Fire lanes serving structures greater than 30 feet in height or schools shall have a minimum clear width of 22 feet. Approved road widths see table 3.5.2. "Dead end" fire lanes over 150 feet in length shall be provided with an

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approved turnaround. Approved turnarounds, see table 3.5.1. All curved sections of fire lanes shall have a minimum outside radius of 45 feet.

Fire lanes shall not exceed 10% slope in any direction. Pavement sections shall be designed to support vehicles weighing up to 75,000 pounds. Where gates are to be installed across a fire lane, the following conditions must be observed:

- The gates must be maintained in an operable condition or be fixed in the open position.
- A means of manually opening the gate in the event of power failure must be provided.
- A key operated switch to the satisfaction of the fire official must be provided.

*Table 3.6.1 Approved turnaround*

Length (feet)	Width (feet)	Turnarounds Required
0-150	20	None Required
150-500	20	120' hammerhead or 60' Y 96' diameter cul-de-sac
501-750	26	120' Hammerhead or 60' Y 96" diameter cul-de-sac
Over 750	Special approval required	

*Table 3.6.2 Standard Fire and Emergency Access Roadway.*

### Standard Requirements for parking restrictions

Street Width Curb to Curb	One Way Traffic	Two Way Traffic
Less than 20'	No parallel parking on either side of the street	No parallel parking on either side of street
20' to 26'	Parallel parking on one side As decided by and approved by Fire Marshal	No Parallel parking on either side of street
26' to 32'	Parallel parking allowed both sides of street	Parallel parking on one side As approved and decided by Fire Marshal
32' or greater	Parallel parking allowed on both sides of street	Parallel parking allowed on both sides of street

#### *F-3.6.3. Signs and markings.*

The property owner or designee shall supply and install signs and other required markings to delineate fire lanes as directed by the fire official. The cost of which will be born by the property owner or designee.

#### *F-3.6.4. Specifications.*

Fire lanes shall conform to the following specifications:

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Metal construction, dimensions twelve (12) inches by eighteen (18) inches. Red letters on a reflective white background with three-eighths-inch red trim strip around the entire outer edge of the sign. Signs shall be mounted with the top of the signs seven (7) feet above grade.

Lettering size to be as follows:

"NO PARKING" - 2 inches,

"OR" - 1 inch,

"STANDING" - 2 inches,

"FIRE LANE" - 2 ½ inches,

Arrow's 1 inch solid, Spacing between words to be uniform.

Type "A"  
arrow to the right  
directions



Type "B"  
arrow to the left



Type "C"  
arrows in both



Type "D" two signs back to back perpendicular to the street.

1. Other type signs or markings approved by the fire official.
2. Curbing shall be painted yellow within the limits of the fire lane.
3. Striping may be required to be marked as needed on the road surface.

#### Section F-3.6.5 Fire Lane restrictions

- (1) It shall be unlawful for any person to park in the designated and marked area, except for school buses that are in the process of receiving or discharging students as long as the bus driver remains with the bus at all times. For the purposes of this subsection, the term "park" shall mean the standing of a vehicle, whether occupied or not, except while obeying traffic regulations, signs or signals or except while involuntarily stopping because of causes beyond the control of the operator of the vehicle.
- (2) In any prosecution under this section, proof that the vehicle described in the complaint, summons or warrant was parked in violation of this code, together with proof that the defendant was at the time of such parking the registered owner of the vehicle, shall constitute a prima facie evidentiary presumption that such registered owner of the vehicle was the person who parked the vehicle at the place and at the time such violation occurred.

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- (3) In addition, the vehicle parked in violation of this section may be impounded by the City of Fairfax Fire Marshal's Office, Fairfax Police Department or the city fire marshal's office and held until the penalty provided and the towing and storage charges incurred are paid.
- (4) This section shall be enforced by the city fire marshal or his staff and the city police department.
- (5) Penalty for violation of this section shall be a fine of fifty dollars (\$100.00) for each offense.

*Section F-3.6.6 Existing signs.*

It shall be unlawful for any person to deface, injure, tamper with, remove, destroy or impair the usefulness of any posted fire lane sign installed under the provisions of this code.

**City of Fairfax  
Digital Data Submission Requirements for GIS**

**Background:**

The City of Fairfax has developed a geographic information system (GIS) to store, manage, and maintain geographic data. The local land development, engineering, and surveying communities have also embraced digital technologies in their own fields. Because development plans are now created using computer aided design and drafting (CAD) software, it is the goal of the City of Fairfax to utilize these techniques to enhance and expedite the design and plan review process within the City and help maintain a digital database of geographic information. For this, requirements have been implemented to allow CAD and other GIS data to be integrated into the City's GIS while preserving the referential and positional accuracy of the original measurements.

**Requirements:**

1. Data *must* be in DXF format if from AutoCAD, Microstation or another Cad software program, or ESRI Shapefile if from a GIS software program. (DWG and DGN files will *not* be accepted)
2. Data *must* be projected in Virginia State Plane North, NAD 83 Harn. Data *must* fit in seamlessly with City's GIS data layers.
3. Data *must* be separated into *individual* thematic layers and labeled accordingly.

**Layers Required** (project dependant)

Building footprints

Parking configuration (including islands, no parking stripes) (Commercial)

Driveways (Residential)

Street Centerlines

Parcel / Property boundaries

Water Lines

Utility Lines

Sidewalks

Right-of-way

Best Management Practice (BMP) (include polygon showing drainage area to each

BMP)

4. A text file or word document *must* accompany the digital data with a description of each layer.

This information is also available on the City's website [www.fairfaxva.gov/it/gis.asp](http://www.fairfaxva.gov/it/gis.asp)

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## City of Fairfax

### “As-Built” Review Requirement Checklist

Project Name: \_\_\_\_\_ Project No. \_\_\_\_\_  
 Project Address: \_\_\_\_\_ Tax Map No. \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
**Phone:** \_\_\_\_\_

STATEMENT OF CERTIFICATION pursuant to Chapters 86-4(h) and 110-109(c)(3) of the Fairfax City Code, I \_\_\_\_\_ do hereby certify that this as-built conforms to the approved plans; conveys all revisions, and represents the actual conditions on this site as of \_\_\_\_\_.

(date)

\_\_\_\_\_  
 (signature)

(Seal)

The above affidavit shall be attached to the cover sheet of each plan and sign by a certified engineer, architect or land surveyor.

#### 1. SITE ELEMENTS

- \_\_\_A. Boundary of site
- \_\_\_B. Location of buildings, setbacks, height and number of stories
- \_\_\_C. Address of building
- \_\_\_D. Site Plan number
- \_\_\_E. Parking spaces and loading areas
- \_\_\_F. Fire lanes (as applicable)

#### 2. LANDSCAPING

- \_\_\_A. Location and type of all plant material
- \_\_\_B. Revised planting schedule to reflect all changes in plant material

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### 3. STORM SEWER

- \_\_\_A. Invert elevations "in" and "out" – existing structure at connection
- \_\_\_B. Size of pipe
- \_\_\_C. Distance between structure centerline to centerline
- \_\_\_D. Type of structure
- \_\_\_E. For yard inlets, the number and locations of throats
- \_\_\_F. Elevation and structure top
- \_\_\_G. All road culverts carrying discharge from storm systems and/or crossing streets
- \_\_\_H. For field connection, give pipe size, invert elevation at upper end and top, and appropriate length

### 4. SANITARY SEWER (SEE ITEM 6)

- \_\_\_A. Invert elevations, "in" and "out" – existing structure at connection
- \_\_\_B. Distance between centerline of structure
- \_\_\_C. Elevation of top
- \_\_\_D. Horizontal location of structure
- \_\_\_E. Lateral table or equivalent information on plan and profile.  
(Note: Plan and profile must be on same sheet.)
- \_\_\_F. Overall sanitary layout sheet

#### 4-A. WATER LINE

- \_\_\_A. Invert elevations, "In" and "out" – existing structure at connection
- \_\_\_B. Distance between centerline of structure
- \_\_\_C. Elevation of top
- \_\_\_D. Horizontal location of structure
- \_\_\_E. Lateral table or equivalent information on plan and profile.  
(Note: Plan and profile must be on same sheet.)

### 5. DETENTION PONDS/STRUCTURES

- \_\_\_A. Locate storm structure as shown
  - all tops, throats, inverts, elevations
  - pipe size, opening for overflow, top of wall and orifice elevation
- \_\_\_B. Adequate spot elevations around entire pond depicting the shape  
(Note: Minimum ten (10) along top and crest of dam width.)
- \_\_\_C. Spot elevation through drainage way to outfall and spillway  
(Note: give width of spillway.)
- \_\_\_D. Provide all information possible for underground detention  
(Note: that underground detention is in place.)
- \_\_\_E. Show access easement (with Deed Book and Page Number) for

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maintenance of pond.

6. EASEMENTS

\_\_\_A. Provide Deed Book and Page Number for sanitary, storm and access easements

7. SUBMISSION

\_\_\_A. Submit five sets of drawings and electronic submission of approved site plan with all revisions and As-Built drawing in pdf format.

8. PAYMENT

\_\_\_A. Submit review fee of \$550 plus \$110 for each acre or fraction thereof.



#### **2.1.5 ADDITIONAL REQUIREMENTS**

Approval of Stormwater Management Plans and Calculations by the City of Fairfax does not complete the City of Fairfax review process. All other applicable City Departments, State, and Federal agencies must also approve the plan as warranted. It shall be the sole responsibility of the Owner/Developer/Designer to acquire all applicable approvals.

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### **Section 3 – HYDROLOGIC ANALYSIS**

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Refer to the *Fairfax County Public Facilities Manual*, Section 6-0800 for Hydrologic design requirements and methodology (<http://www.co.fairfax.va.us/gov/DPWES/publications/pfm/6-0800.htm>).

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## Section 4 – OPEN CHANNEL DESIGN

### 4.1 INTRODUCTION

Open channels, where allowed, shall be designed according to the following criteria. The designer's calculations shall include the runoff from the property being developed and the runoff from contributing off-site areas, assuming ultimate development in accordance with the requirements of paragraph [1.1.9, Performance Standards for Facilities](#) (excerpted from the City Code).

Field Code Changed

### 4.2 METHODOLOGY

Refer to Virginia Erosion and Sediment Control Handbook.

#### 4.2.1 OFF-ROAD DRAINAGE SYSTEM

The design of the off-road drainage system shall include the watershed affecting the subdivision and shall be extended to a watercourse or drainage way adequate to receive the storm drainage. Swales and channels shall be constructed true to definition and shall join the contours of the surrounding topography in such a manner that will create a gently rolling natural appearance. Side drainpipes along side property lines shall be extended to the back drainage easement.

When the drainage system is outside of the road right-of-way, the subdivision shall make provision for dedicating an easement to the City of Fairfax to provide for the future maintenance of said system.

#### 4.2.2 REQUIRED DOCUMENTATION FOR OPEN CHANNEL DESIGNS

The following information must be submitted to the City of Fairfax for the design of open channels, but is not limited the following:

- A. Vicinity Map: A vicinity map of the site and subject reach.
- B. Site Map: A detailed map of the area and subject reach.
- C. Watershed Map: A watershed map showing existing and proposed drainage area boundaries along with all sub-area delineations and all areas of existing or proposed development.
- D. Discharge Calculations: Discharge calculations specifying the methodology and key assumptions used, along with computed discharges at key locations. The designer's calculations shall include the runoff from the property being developed and the runoff from contributing off site areas, assuming ultimate development in accordance with the current zoning regulations and the Land Use Plan.

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- E. Hydraulic Calculations: Hydraulic calculations specifying the methodology used. All assumptions and values of design parameters must be clearly stated.
- F. Plotted Cross-Sections: Typical existing and proposed cross-sections.

#### 4.3 USAGE, IMPROVEMENT AND PRESERVATION OF CREEKS AND CHANNELS

- A. Natural creeks and drainage channels shall be used where available to route stormwater runoff from the city.
- B. Natural drainage systems will be improved where necessary to meet the specified performance standards for land conditions that existed as of September 17, 1974. To the maximum degree possible, these improvements shall be made in such a manner as to preserve, enhance or restore the vegetation, including trees, along the creek line so that the aesthetic, environmental and ecological values of the vegetation are not lost to the community
- C. Where land alteration after September 17, 1974, will result in increased runoff, detention, or retention ponds must be provided so that such additional runoff will not appreciably increase the load on the existing storm drainage system.

#### 4.4 LANDOWNER'S DUTIES AND RESPONSIBILITIES

- A. **Land alteration resulting in same or less runoff than for September 17, 1974 usage:** The landowner shall provide on-site drainage facilities where necessary to channel rainfall from the landowner's property to existing natural drainage streams or city-owned drainage systems. The design and construction of such facilities shall be in accordance with the *City of Fairfax Public Facilities Manual* as they may be hereafter revised and promulgated by the City Engineer and approved by the City Council from time to time.
- B. **Land alteration resulting in greater runoff than September 17, 1974 usage:** The landowner shall provide on-site detention, on-site drainage, or retention pond facilities in accordance with the *City of Fairfax Public Facilities Manual* as they may be hereafter revised and promulgated by the City Engineer and approved by the City Council from time to time. Retention ponds will be permitted as an alternative to detention ponds where necessitated by the topography of a particular site and with the approval of the City Engineer. Performance standards for retention ponds will be the same as for detention systems. Where on-site detention or retention cannot be practically accomplished the landowner shall as an alternative pay for improvements to those existing drainage systems, as necessitated by his land alterations. Neither detention nor retention shall be required where land alterations do not increase the runoff more than 15 percent of the runoff existing on the site as of September 17, 1974. In addition, if the area of the site undergoing alteration is less than one acre and such site or lot exists on September 17, 1974, neither detention nor retention shall be required.
- C. **Natural drainage channels on private property:** Where natural drainage channels pass through a landowner's property, it shall be the responsibility of the  
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landowner to maintain the natural channel in a manner which will not be detrimental to other inhabitants of the City. No change shall be made in the contours of any land which affects the course, width or elevation of any floodplain or natural or other drainage channel in any manner which will obstruct, interfere with, or change the drainage of such land without providing adequate drainage in connection therewith, as approved by the City Engineer. The bounds of the natural stream channel are to be considered as extending to the water level identified for the 100-year storm as defined in this section. All natural stream modifications and maintenance are to be accomplished in accordance with the City of Fairfax Public Facilities Manual as they may be hereafter revised and promulgated by the City Engineer and approved by the City Council from time to time.

**D. Maintenance of on-site drainage facilities:**

- 1) The landowner and his successors in title to the facilities and the site served thereby shall be responsible for the repair, replacement and other maintenance of the facility.
- 2) The landowner and his successors shall perform periodic maintenance on the facilities and such other repairs, replacements or maintenance thereon as may be required by the city engineer.
- 3) The City Engineer, his agent or representative, may inspect the facilities from time to time to determine the necessity of repair, replacement or other maintenance thereof.
- 4) If the facilities are determined to be in need of repair, replacement or other maintenance, the city engineer, his agent or representative, shall serve on the landowner a written notice describing the condition of the facilities and specifying the required repairs, replacements or other maintenance to be made to correct such deficiencies. Such notice shall require the landowner to comply with the terms thereof within 10 days of receipt.
- 5) Any landowner aggrieved by the determination of the City Engineer, his agent or representative, may appeal such determination to the City Council within 10 days of the receipt of notice thereof. Such appeal shall be placed on the agenda for the next public council meeting after notice of the appeal is given.
- 6) Upon refusal or neglect by the landowner or his successors to comply with the repairs, replacements or other maintenance required by the City Engineer, the City, through its agents or employees, may repair, replace or otherwise maintain such facilities.
- 7) If the City, through its agents or employees, repairs, replaces or otherwise maintains any facility after complying with the notice requirements of this section, the costs or expenses thereof shall be charged to and paid by the landowner and/or his successors and may be collected by the City as taxes and levies are collected.

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- 8) Every charge authorized by this section with which the landowner or his successors has been assessed and which remains unpaid shall constitute a lien against the property.

## 4.5 OPEN CHANNEL DESIGN

The proper hydraulic design of a channel is of primary importance in insuring that flooding, sedimentation and erosion problems do not occur. The following general criteria should be used in the design of open channels:

### 4.5.1 DESIGN FREQUENCIES FOR OPEN CHANNEL DESIGN

Proposed channel outfall shall be checked to assure that a pre 10-year storm will not overtop the banks and with a 2-year storm to verify that the stormwater will not cause erosion of channel bed or banks. See also [paragraph 4.5.3 B, Downstream Protection – Channel Analysis](#).

Field Code Changed

Refer also to the Virginia Department of Conservation and Recreation *Erosion and Sediment Control Handbook*.

### 4.5.2 CHANNEL GEOMETRY, SLOPE & VELOCITY

#### A. CHANNEL SIDE SLOPE

In grass-lined channels, the normal maximum side slope will be 3 horizontal to 1 vertical (3:1) for no greater than 50 feet, which is the practical limit for mowing equipment. In some areas, local soil conditions may dictate the use of side slopes flatter than 3:1 to ensure slope stability.

#### B. CHANNEL BOTTOM WIDTH

In grass-lined channels, the minimum channel bottom width shall be 3 feet. In concrete-lined channels, the minimum bottom width shall be 2 feet except where concrete lined roadside ditches are used where "V" shaped ditches are permissible.

#### C. CHANNEL FLOW-LINE SLOPE/VELOCITIES

Excessive flow velocities in open channels can cause erosion and destabilize side slopes, and may pose a threat to safety. Velocities, which are too low, may allow the deposition of sediment and subsequent channel clogging.

Slope of the channel flow-line (invert) is generally governed by topography and the energy head required for flow. Since flow-line slope directly affects channel velocities, channels should have sufficient grade to prevent significant siltation. However, slopes should not be so large as to create erosion problems. The maximum channel invert slope will be limited by the maximum flow velocities given in Table 3.17A, *Permissible Velocities of Grass-line Channels* of the *Virginia Erosion and Sediment Control Handbook*. Appropriate channel drop structures may be used to limit channel invert slopes in steep areas.

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### 4.5.3 CHANNEL PROTECTION

#### A. DRAINAGE WAYS

The subdivision shall adequately protect all ditches and drainage ways to the satisfaction of the City. Ditches and open channels shall be stabilized, seeded, and mulched, sodded or armored, depending on grades and types of soils. Seeding, sodding, and armoring operations shall be in compliance with the *City of Fairfax Public Facilities Manual* and the *Virginia Erosion and Sediment Control Handbook*, latest edition. There must be a good stand of permanent grass and/or native plant materials to meet this requirement. Calculation shall be made to determine the need for riprap outlet protection at pipe outlets.

The watercourse or ditch easement shall be wide enough to contain said ditch with ample clearance for the operation of maintenance equipment.

#### B. DOWNSTREAM PROTECTION – CHANNEL ANALYSIS

The design of an adequate drainage system must (a) account for both off-site and on-site stormwater runoff; (b) honor natural drainage divides; and (c) convey stormwater runoff and discharge into an adequate channel. An adequate channel shall be defined as a natural or man-made channel or pipe which can convey the stormwater runoff without overtopping its banks, surcharging the system, or creating erosive velocities. (Reference *Virginia Erosion and Sediment Control Handbook* - Minimum Standard MS-19 {4VAC50-30-40 *Minimum Standards*, [http://www.dcr.virginia.gov/soil\\_&\\_water/index.shtml](http://www.dcr.virginia.gov/soil_&_water/index.shtml)}.) Adequate drainage must also include provisions for overland relief to accommodate stormwater runoff in excess of the design storms without damaging or endangering adjacent structures or properties. See Virginia Department of Conservation and Recreation Technical Bulletin No. 1, *Stormwater Management & Erosion and Sediment Control Program Stream Channel Erosion Control Policy Guidance*.

Adequacy of all channels and pipes shall be verified in the following manner:

- 1) **One-percent rule<sup>2</sup>:** The designer shall demonstrate that the total drainage area to the point of analysis within the channel is 100 times greater than the contributing drainage area of the project in question: or
  - a. Natural channels shall be analyzed by the use of a 2-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks; and

<sup>2</sup> The theory is that the increase in runoff associated with the development project will be insignificant when compared to the peak discharge associated with a watershed of such magnitude. The channel is automatically assumed to be adequate to handle the increase in runoff. Adequate conveyance to the stream; however, is required. The exception to this may be in cases where the stream channel is experiencing significant erosion due to existing levels of development. New development should not add to or exacerbate a deterioration condition.

- b. All previously constructed man-made channels shall be analyzed by the use of a 10-year storm to verify that stormwater will not overtop its banks and by the use of a 2-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks: and
  - c. Pipes and storm sewer systems shall be analyzed by the use of a 10-year storm to verify that stormwater will be contained within the pipe or system.
- 2) If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the designer shall:
- a. Improve the channel to a condition where a 10-year storm will not overtop the banks and a 2-year storm will not cause erosion to the channel bed or banks; or
  - b. Improve the pipe or pipe systems to a condition where the 10-year storm is contained within the appurtenances; or
  - c. Develop a site design that will not cause the pre-development peak runoff rate from a 2-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a 10-year storm to increase when runoff outfalls into a man-made channel; or
  - d. Provide a combination of channel improvement, stormwater detention, or other measure that is satisfactory to the City of Fairfax to prevent downstream erosion.

#### C. CHANNEL EROSION CONTROL

Erosion protection is necessary to insure that channels maintain their capacity and stability and to avoid excessive transport and deposition of eroded material.

Erosion and Sedimentation Control Plans, permit applications, and fees shall be submitted in accordance with City Code. **The City of Fairfax has local review authority for erosion and sedimentation control plans. Plans must be submitted to the City Engineer.**

All Erosion and Sediment Control Plans measures shall be designed in accordance with the Virginia Erosion and Sediment Control Law and the City of Fairfax's City Code, whichever is more stringent. The Designer is to reference the *Virginia Erosion and Sediment Control Handbook*, latest edition. This manual contains valuable information and tools for developing plans to minimize soil erosion and prevent sedimentation pollution associated with land-disturbing activities.

#### 4.6 OVERLOT GRADING PLAN IN RESIDENTIAL AREAS

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Overlot grading plan in residential areas with easement. Overlot drainage calculations provided for 100-year storm verifying separation from buildings both laterally and vertically. Easement to be provided wide enough to cover 25-year Storm.

See Section 6-1503 – *Overlot Grading in Residential Areas* of the Fairfax County Public Facilities Manual (<http://www.co.fairfax.va.us/gov/DPWES/publications/pfm/6-1500.htm>).



## Section 5 – CULVERT DESIGN

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The purpose of this section is to establish standard procedures and criteria for Culvert Design for the City of Fairfax.

### 5.1 INTRODUCTION

A drainage system shall be designed and constructed by the developer to provide for the proper drainage of the surface water of the subdivision and the drainage area of which it is part. The storm drainage system shall follow existing topography as nearly as practical. Additional design information shall be submitted to indicate that provision has been made for the adequate disposal of surface water without any damage to the developed or undeveloped land downstream or below the proposed subdivision. A copy of all drainage computations shall be submitted, clearly stating any assumptions made.

The designer's calculations shall include the runoff from the property being developed and the runoff from contributing off-site areas, assuming ultimate development in accordance with the current zoning regulations and the Land Use Plan.

### 5.2 PIPE CULVERT DESIGN - GENERAL

Private drainage culverts and public drainage culverts within a subdivision or site development sub-basin shall be designed according to this section.

Pipe culverts shall be aligned parallel to the longitudinal axis of the channel, as much as possible, to insure maximum hydraulic efficiency and to minimize erosion. In areas where a change in alignment is necessary, the change shall be accomplished at junction boxes or upstream of the culvert in the open channel. Appropriate erosion protection shall be provided.

Pipe culverts crossing beneath the roadway shall be designed to span from ditch line to ditch line.

#### 5.2.1 ROADWAY DRAINAGE SYSTEM

The road storm drainage system shall serve as the primary drainage system and shall be designed to carry roadway, adjacent land, and building storm water drainage. No storm water shall be permitted into the City's sanitary sewer system.

### 5.3 FREQUENCY

The minimum design frequency for culverts shall conform to Table 5.1, below:

Table 5.1 Minimum Design Frequency for Storm Drainage Culverts	
Condition	Minimum Design Frequency
Normal Runoff	10-year
Primary road crossings	25-year (culverts should be checked for effects of 100-yr storm).
Secondary roads and other locations	10-yr (culverts should be checked for effects of 100-yr storm).
Flooding of building structures	100-yr design flow
Curb and gutters, curb and gutter inlets	2-year

## 5.4 HYDRAULIC DESIGN OF CULVERTS

The City of Fairfax uses the design procedures of VDOT *Drainage Manual, Chapter 8 – Culverts* or the Hydraulic Design Series No. 5 (*HDS-5*) for the design of pipe culverts. *HDS-5* was designed to analyze flow in pipes using many different variables. The procedures in the *Urban Drainage Design Manual*, HEC-22, also may be utilized. HEC-22 utilizes many of the same procedures in pipe culvert analysis with references to *HDS-5*.

### 5.4.1 PERFORMANCE STANDARD

**Primary drainage facilities:** Where culverts, storm sewers or other enclosed conduits have been approved for use by the Director of Public Works or his designee as storm drainage transport they shall, in addition to meeting other requirements, be adequate in the opinion of the Director of Public Works or his designee to prevent flood damage to private or public property. Conduits used in conjunction with gutters and inlets shall be adequate to limit the system hydraulic grade line to no higher than 12 inches below the grade of the gutter.

## 5.5 CURB INLET DESIGN

Curb storm drainage inlets shall be provided at intervals along roadways. Refer to the VDOT *Drainage Manual, Chapter 9 – Storm Drains*, latest revision or the USDOT Federal Highway Administration *Urban Drainage Design Manual*, Hydraulic Engineering Circular No. 22 for curb inlet design methodology.

Gutters and inlet spacing and sizing shall be adequate to limit the spread of water to 10 feet into the roadway.

Storm drainage inlets will be placed so that crosswalks will not be flooded during the design storm intensity.

## 5.6 EROSION CONTROL

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Inlet and/or outlet protection is necessary to insure those channels upstream and downstream of pipe culverts maintain stability and to avoid excessive transport and deposition of eroded material.

All erosion and sediment control measures shall be designed in accordance with the *Virginia Erosion and Sediment Handbook*, latest revision. This manual contains valuable information and tools for developing plans to minimize soil erosion and prevent sedimentation pollution associated with land-disturbing activities.

## Section 6 - DETENTION/RETENTION DESIGN & OTHER BMP's

### 6.1 PERFORMANCE CRITERIA

#### 6.1.1 CREEK DETENTION SYSTEMS:

These systems shall have adequate capacity and metering to prevent flooding and flood damage outside the floodplain area as designated in this chapter. Where creek detention is to be utilized in order to solve an existing flooding problem within the floodplain, the City Engineer may specify increased capacity and lower release rates.

#### 6.1.2 ON-SITE DETENTION SYSTEMS:

On-site detention systems are used to offset the loss of natural water detention and natural metering caused by land alteration. The system shall have adequate capacity and metering to limit the maximum runoff from the site after land alteration to a value no greater than that, which existed before the alteration for the specified design storm.

- A. The design of on-site detention facilities or such retention facilities as may be requested or approved by the city shall be as set forth in the following:
- 1) **Design Storm:** The design storm used to establish facility sizes shall be as specified in Table 1.1 of this division.
  - 2) **Peak Discharge Flow:** The discharge flow from the facility, when operating at the spillway overflow level, shall be  $\pm 10$  percent of the maximum peak runoff which would have resulted from the specified design storm and the September 17, 1974 land use.
  - 3) **Minimum Volume:** The detention volume shall as a minimum be equal to the additional runoff volume from the site caused by the land alteration and the specified design storm. The detention volume shall be computed by the hydrograph method. The design storm shall be the 100-year storm for a 6-hour duration (5.5 inches).
  - 4) **Spillways:** All detention facilities shall contain spillways so designed and constructed as to convey that excess flow which could occur from a standard project storm without damage to the facility or upstream or downstream properties within the city.
  - 5) **Structural Safety Factors:** Standard engineering safety factors are to be applied to all detention facilities.
  - 6) **Erosion Control:** The proper material for channel linings is to be provided to prevent erosion from the mean design channel velocity.

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- 7) **Debris:** Debris is to be removed periodically to maintain efficient hydraulic functioning. Trash racks shall be used.

### 6.1.3 MUNICIPAL DETENTION FACILITIES

A. The design of municipal detention facilities shall be as set forth in the following:

- 1) **Design Storm:** The design storm used to establish facility sizes shall be as specified in Table 1.1 of this division.
- 2) **Peak Discharge Flow:** The discharge flow from the facility, when operating at spillway overflow level, shall be  $\pm 10$  percent of a value specified for the particular facility as the maximum peak runoff flow which will result in a zero damage flood height along the downstream channel. Under no circumstances will this flow exceed the maximum peak runoff which would occur from the specified design storm and the September 17, 1974, land use.
- 3) **Minimum Volume:** The detention volume shall as a minimum be equal to the additional runoff volume from the site caused by the land alteration and the specified design storm. The detention volume shall be computed by the hydrograph method. The design storm shall be the 100-year storm for a 6-hour duration (5.5 inches).
- 4) **Spillways:** Same as specified in paragraph 6.1.2 A 4), *Spillways*.
- 5) **Structural Safety Factors.** Same as specified in paragraph 6.1.2 A 5), *Structural Safety Factors*.
- 6) **Erosion control:** Same as specified in paragraph 6.1.2 A 6), *Erosion Control*.

## 6.2 DESIGN

Refer to the Virginia Stormwater Management Handbook, Chapter 3. See also Chapter 3, Appendix B through E for the applicable checklists to be submitted with plans ([http://www.dcr.virginia.gov/soil\\_&\\_water/index.shtml](http://www.dcr.virginia.gov/soil_&_water/index.shtml))

## Section 7 – REFERENCES

- 7.1 American Concrete Pipe Association, *Concrete Pipe Design Manual*, 1985.
- 7.2 Bureau of Public Roads, *Hydraulic Charts for the Selection of Highway Culverts*, Hydraulic Engineering Circular No. 5, U.S. Department of Commerce, Washington, DC, 1963.
- 7.3 Chow, Ven Te, *Handbook of Applied Hydrology*, McGraw-Hill Book Company, New York, 1964.
- 7.4 Chow, Ven Te, *Open Channel Hydraulics*, McGraw-Hill Book Company, New York, 1959.
- 7.5 Dodson & Associates, Inc., *Drainage Criteria Manual for Montgomery County, Texas*, STRN DODSON-89/004, November 1989.
- 7.6 Federal Highway Administration (FHWA), *Hydraulic Design of Highway Culverts*, U.S. Department of Transportation, Federal Highway Administration, Hydraulic Design Series No. 5, September 1985.
- 7.7 Federal Highway Administration (FHWA), *Design of Stable Channels with Flexible Linings*, U.S. Department of Transportation, Federal Highway Administration, Hydraulic Design Series No. 15, 1988.
- 7.8 Federal Highway Administration, *Design of Urban Highway Drainage – State of the Art*, Report FHWA-TS-79-225, U. S. Department of Transportation, Washington, D. C., 1979.
- 7.9 Federal Highway Administration, *Report FHWA-II 84-202*, U. S. Department of Transportation, Washington, D. C.
- 7.10 Frederick, Ralph H., et al, *Five- to 56-Minute Precipitation Frequency for the Eastern and Central United State*, Hydro-Meteorological Report No. 35, NOAA, National Weather Service, Silver Spring, Maryland, 1977
- 7.11 Hershfield, David M., *Rainfall Frequency Atlas of the United States for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years*, Technical Paper No. 40, Weather Bureau, U.S. Department of Commerce, Washington, D.C., 1961.
- 7.12 Hydrologic Engineering Center (HEC), *HEC-1 Flood Hydrograph Package Users Manual*, U.S. Army Corps of Engineers, Hydrologic Engineering Center, Davis, CA, September 1981, Revised 1985.
- 7.13 Malcom, H.R., *Elements of Urban Stormwater Design*, Seminar Handbook, North Carolina State University, 1989.
- 7.14 McCuen, R.H., *A Guide to Hydrologic Analysis Using SCS Methods*, Prentice-Hall, 1982.

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- 7.15 DCR, *Erosion and Sediment Control Handbook*, Third Edition, 1992.
- 7.16 DCR, *Stormwater Management Handbook, Volume I and II*, First Edition, 1999.
- 7.17 Virginia Stormwater Management Regulations and Act, 1998, DCR, Division of Soil and Water Conservation,
- 7.18 VDOT *Drainage Manual*,  
<http://www.extranet.vdot.state.va.us/locdes/drainage/Start%20VDOT%20Drainage%20Manual.pdf>
- 7.19 Soil Conservation Service, *SCS National Engineering Handbook*, U.S. Government Printing Office, Washington, D.C. 20402, August 1972.
- 7.20 Storm Water Pollution Control, 2<sup>nd</sup> Edition, Roy D. Dodson, PE, McGraw-Hill, 1999
- 7.21 *Surface Water Management Manual*, Volume V, Runoff Treatment BMPs, Tacoma Public Works, Environmental Services, City of Tacoma, January 2003.
- 7.22 *Urban Storm Drainage Criteria Manual*, 1969.
- 7.23 *Urban Drainage Design Manual*, Hydraulic Engineering Circular No.22, USDOT, Federal Highway Administration
- 7.24 U.S. Geological Survey, *Water Resources Investigation Report 87-4096*.
- 7.25 Viessman, W. H. Jr., G. L. Lewis and J.R. Knapp, *Introduction To Hydrology*, 3<sup>rd</sup> edition, Harper and Row, 1989.